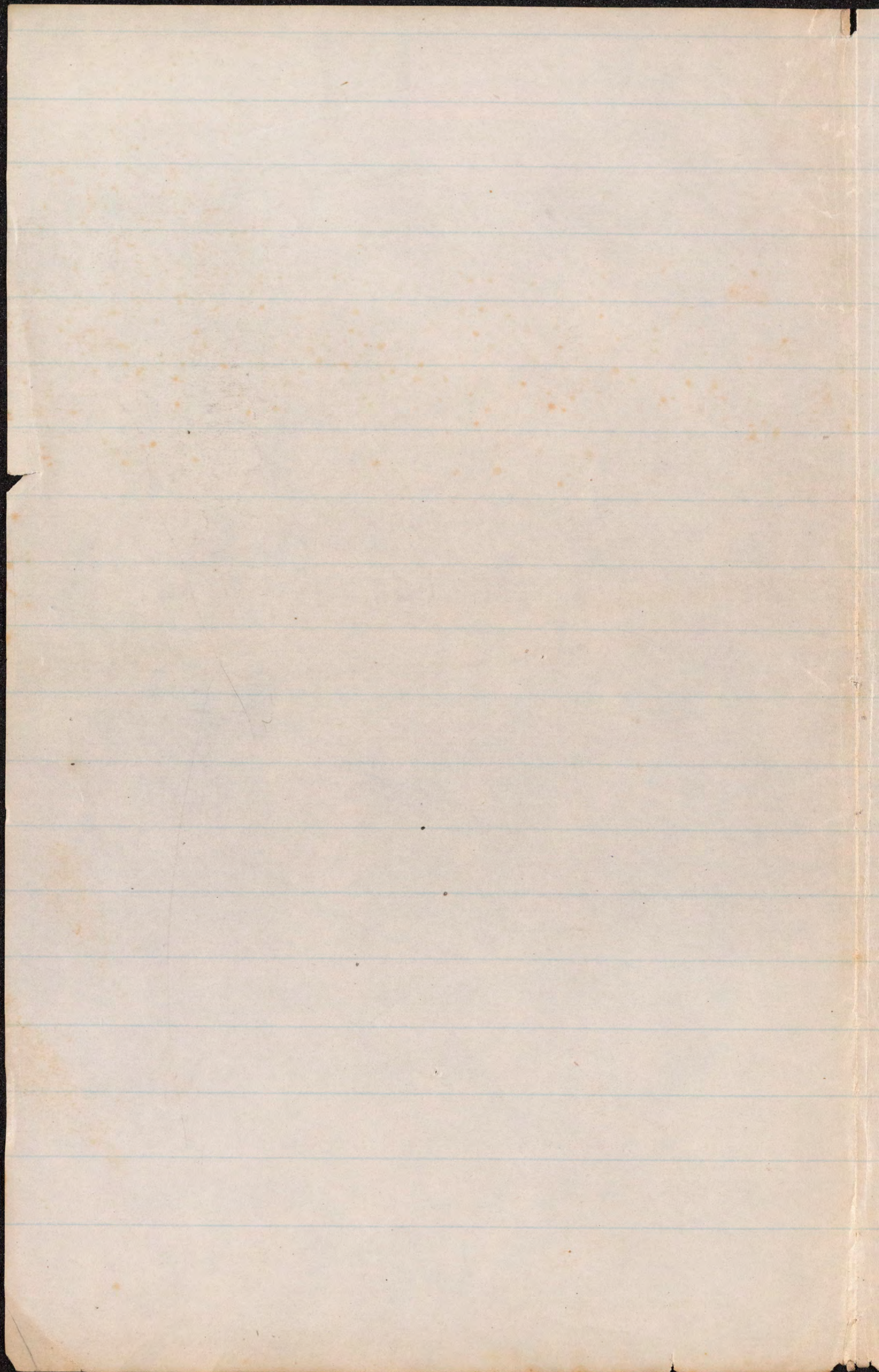


Muscular Hygiene.

Try to get ~~some chest~~
Barnett's Chest Expander



1875 -

Climate for Consumption -

Mortality of 3 dists of U.S.

Hygiene of Skin -

Clothing
Bathing

Women's clothing
Bed during Sick

32° 70°, 70° 85°,
85° 90°, 90° 96°
96° 100° - 100° 120°

Hygiene of

Shower
Bath
Sea B.
W. B. in
disinfect
& old do.

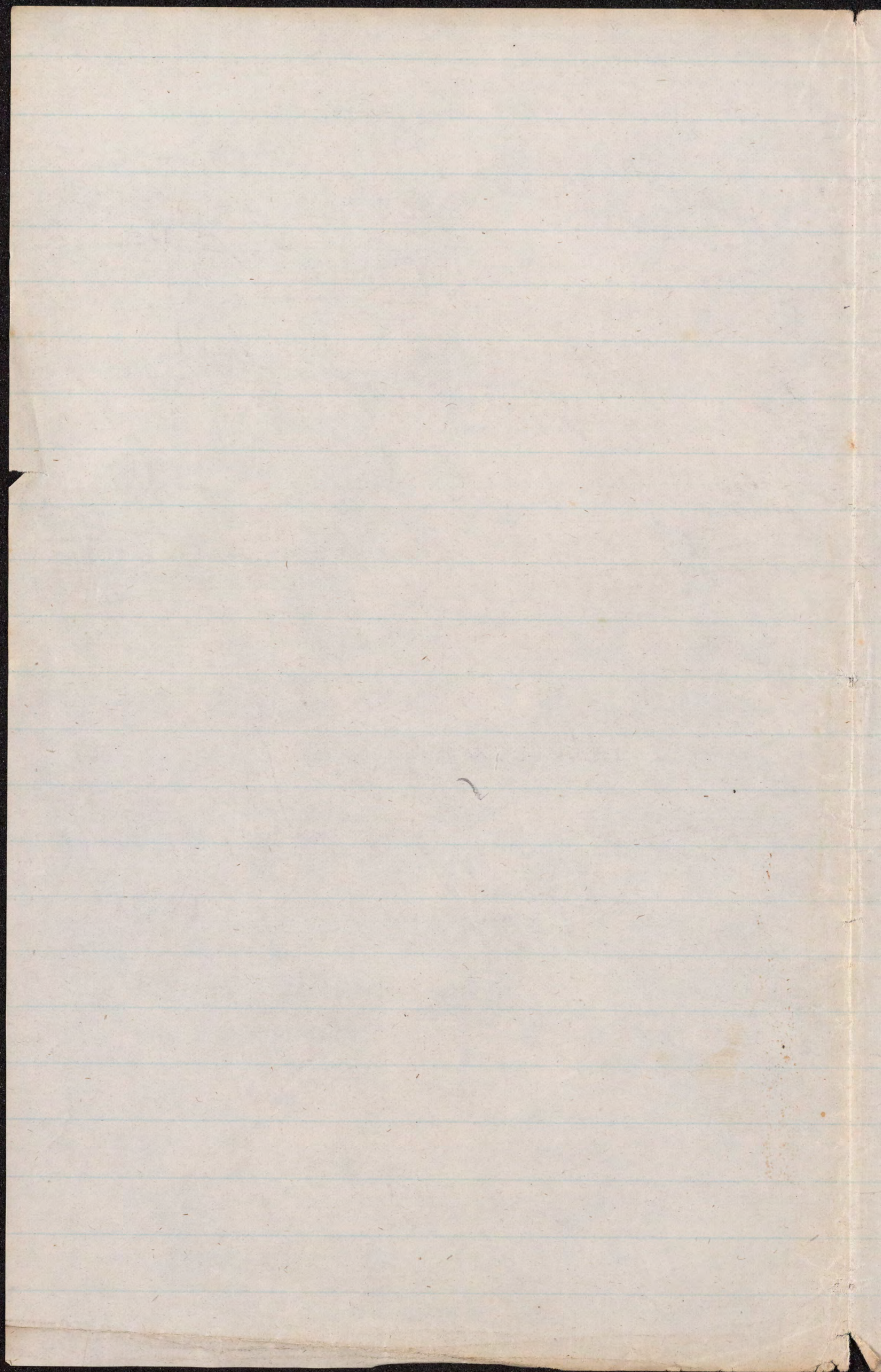
Motor Apparatus.

Muscles

&

Bones

Exercising &
Rest -



Muscular Performance.

2250 pounds lifted at once.

Maximum { 723 tons lifted 1 foot in 12 hours.
100 miles walked within 24 hours.

Average ——— 300 tons lifted "1 foot" in " " " "

Minimum ^{advantageous average} for a healthy man, 150 tons " " " "
about equivalent to a walk of 9 miles.

Marching

Slow time — Length of step, 30 inches { Common 28
French 26

Quick time — " " , 30 " "

Double quick — " " , 36 " "

Average rate, 2.8 miles per hour.

Daily average, 12 miles.

Effects of Extreme Heat.

1. Sun-stroke; congestion of the brain.
2. Heat-collapse; prostration from blood ^{thick}-change.

Thursday

~~Hygienic of Circulation, & of Excretion~~ 2
~~Hygienic of Muscular Action~~ 3
Laws of healthy nutrition: 1. Supply of blood. 2. Good blood. 3. Immediateness
Modes of Exercise: 4. Exercise
5. Repose.

walking — 9 miles a day.

Riding on horseback — good, quick — but omits legs.

Drumming & sailing — (passive only)

Fencing & Boxing — fair exercise) —

Dancing — in open air —

(The question of its moral effects does not come before us here)

Skating — very advantageous, for both sexes.

Rowing — good — though it ^{too} may be overdone.

Swimming — a very severe exercise when continued.
All enjoyed exercises do most good.

Much force so put forth; Compare treadmill

Chinese mandarin game of English baseball
or baseball Tennis, Quoits — Battledore
Games as Cricket &c — Croquet very quiet.

Hunting — Natural scene excursion —

even fishing — (J. Walton)

“Constitutionals” —

But, as last resort, even dumbbells better than nothing. over

Health - Left: -

(Good - but not alone enough for physical culture.)

Cumulative exercise;
its principle & value.
Contract between limb just out of splints, & one recently practised in an exercise; hand in!

Hamerton, in his book on the "Intellectual Life", shows that a good deal of bodily activity is quite compatible with the best kind of intellectual labor. Sir Walter Scott was much on horseback, and he and the poet Wordsworth were both great walkers. Goethe, too, delighted in riding, swimming, walking and skating. Isaac Walton's fishing-rod is famous; and so, in our own times, has become Tyndall's Alpenstock; as well as Charles Kingsley's rambles by the sea-side, and in the forests of the tropics. Gladstone, the greatest English statesman and scholar, within the last year, was seen just before a public meeting, at Manchester, wielding the axe in true woodman's style.

End of 28th Lecture, 1873.



A SYSTEM OF
HEALTH EXERCISE.

—THE—
CHEST EXPANDER,

—AND—
Parlor Gymnasium,

FOR USE AT HOME.

BY DR. BARNETT.

Principal Depot, 599 Broadway, N. Y.

 See numerous Engravings and Testimonials inside. 

FOR SALE BY

1874.

J. W. Schermerhorn & Co.,

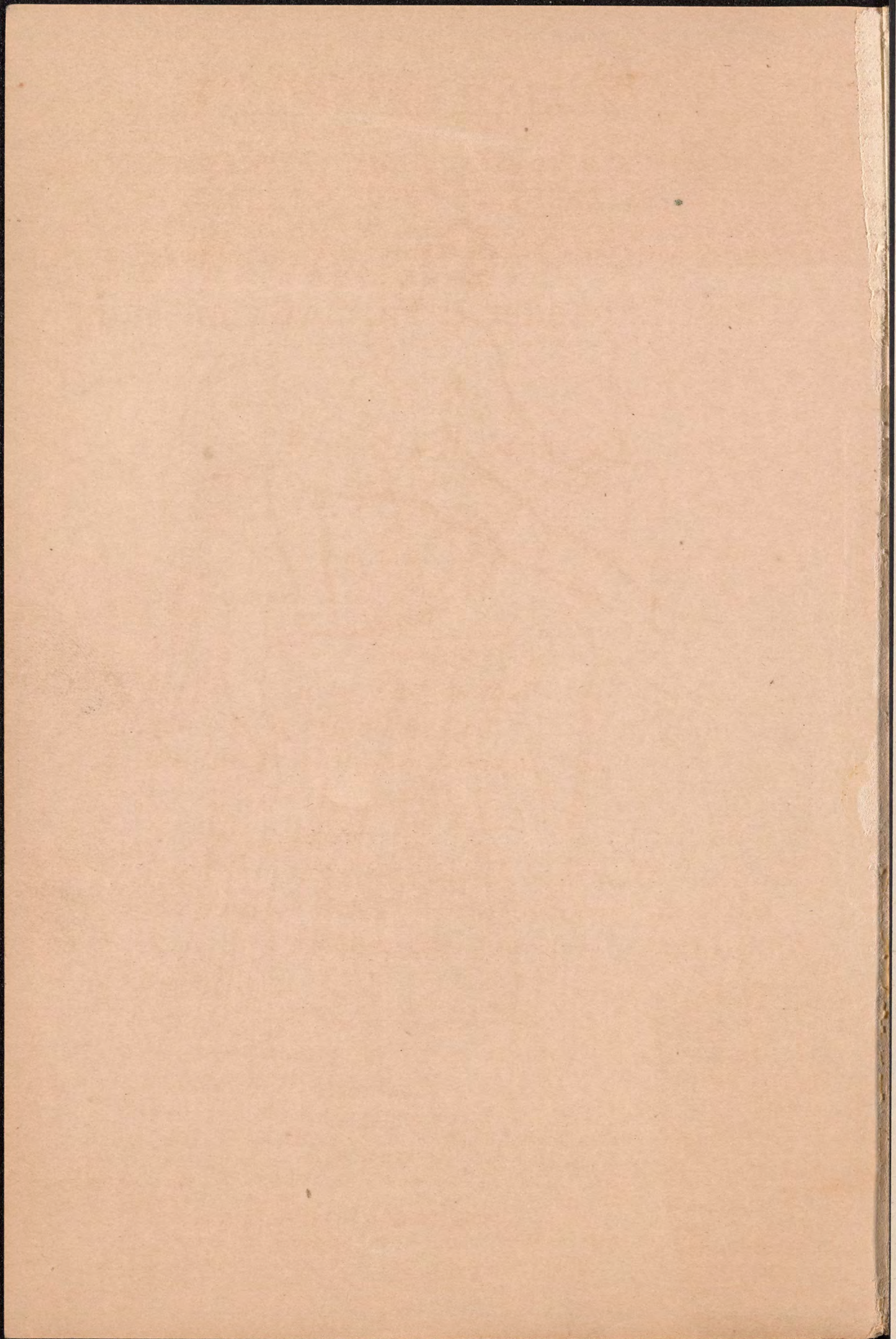
PUBLISHERS AND MANUFACTURERS,

No. 14 Bond St.

New York.

PUSEY & REED, PRINTERS, 1272 BROADWAY,





FOR TWENTY-FIVE DOLLARS

Dr. JOHNSON'S PORTABLE PARLOR
HEALTH-LIFT
AND
LIFT EXERCISE

ELASTIC, REACTIONARY AND CUMULATIVE:

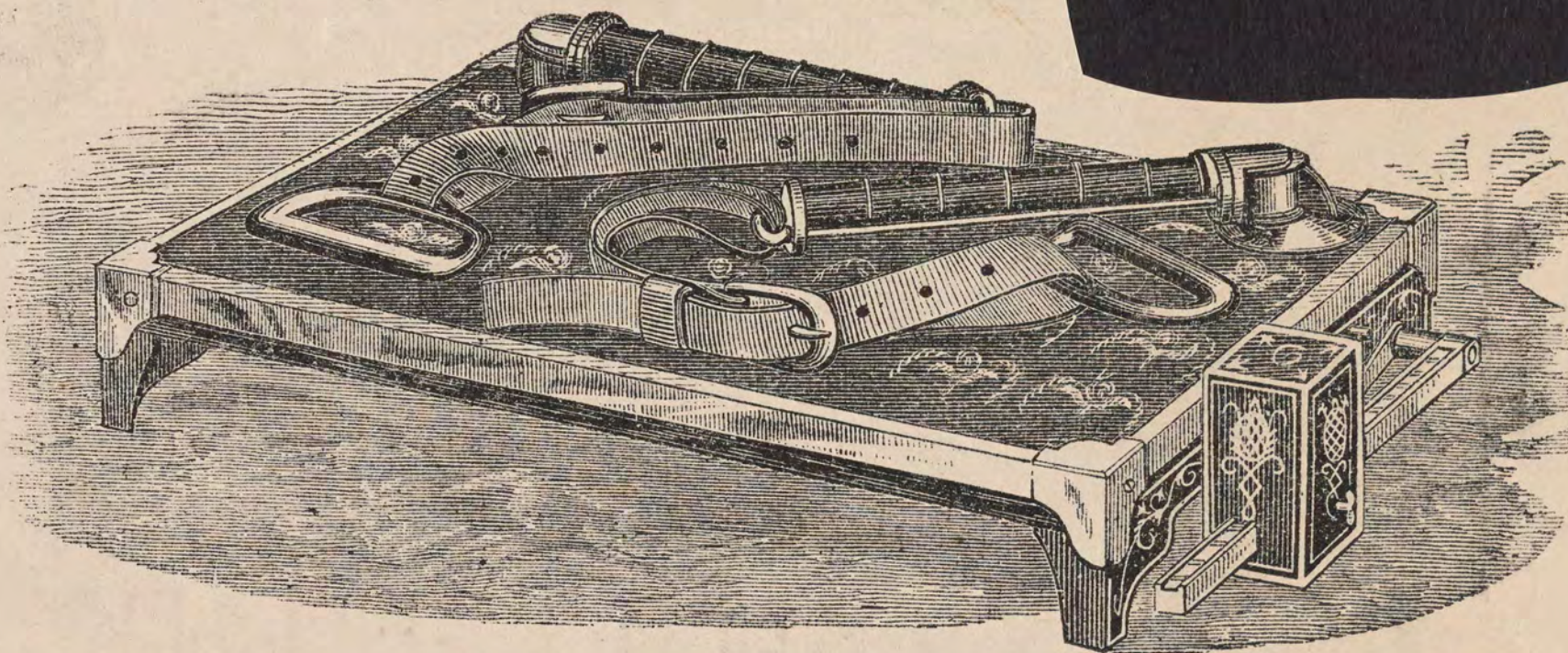
A COMPLETE GYMNASIUM

FOR

MEN, WOMEN AND CHILDREN.

(PATENTED OCT. , 1875.)

HEALTH AND EVEN LIFE, IS IMPOSSIBLE WITHOUT EXERCISE—PHYSICAL CULTURE IS INDISPENSABLE TO MENTAL DEVELOPMENT. The "Lift" CONCENTRATES EXERCISE into a FEW MINUTES per day, yet DISTRIBUTES it over the WHOLE BODY. It Cures the Sick and Invigorates the Healthy—Contracts and Relaxes the Whole Muscular System—Doubles the Strength in a few Months, without Fatigue or Exhaustion—EQUALIZES AND INVIGORATES THE CIRCULATION OF BLOOD, upon the Quality, Quantity and Uniform and Active Circulation of which depend Health, Cheerfulness of Spirit, and Vigor of Thought.—It Quickens the Action of all the other Fluids, and Stirs to the Centre the Whole Body—Tones the Nervous System, and Increases the General Vitality—Rests, Relieves and Exhilarates the Mind of the Brain-Worker—Affords the Greatest Amount of Exercise and Physical Training in the Least Possible Time—Gives Harmonious, Simultaneous and Co-operative Play and Action to the Greatest Possible Number of Organs, embracing Muscles, Viscera, Absorbents, Veins, Arteries, Capillaries, Nerves, Brain, and Will; upon which depend the Restoration and Preservation of Health, and a Uniform, Vigorous Action of all the Functions of both Body and Mind.



Every Invalid, every Scholar, every Person of Sedentary Occupation should have one of these Lifts. It Weighs but 18 lbs.—Packs in a Space 4 by 13 by 20 inches—Affords a "Dead Weight Lift" of from 50 to 1000 lbs., with only 4 lbs. "Dead Weight"—Carpeted, Metal-bound, Nickel-plated, Durable, Ornamental as a piece of Parlor Furniture—Cheap enough to be afforded by every Family—yields all the Curative and Hygienic Effects of the Heavy, Bulky Three Hundred Dollar Machines.

Price of the Cross-Bar Lift, \$25—The Side-handle Lift, \$30.

Send for Full Circular. For Sale by

W. B. ZIEBER,

921 Chestnut St., Philadelphia.

Portable

Health Sign

The following article is from the pen of the well-known writer and prominent Minister, Rev. J. F. W. WARE, D.D., Pastor of Arlington St. Church, Boston, Mass.

Mr. Ware has been a regular paying subscriber at the Boston Agency of the Health-Lift Co. for three years, and is, therefore, qualified to speak, and has done so solely with the view of interesting others in what he found of great benefit. He was under no obligation to write, and did so unsolicited. His article appeared without the knowledge of any one interested. These significant facts should give great weight to every word it contains.

THE HEALTH-LIFT.

I want to ask you to give room to a few words about the "Health-Lift."

In common with many others, I had heard vaguely of this thing, with the same sort of vague indifference or skepticism with which one almost always hears of new things. The chance word of a friend at the right moment—the word in season—followed by the prompt "*Come with me now,*" led to the mysteries and the blessings of the "Lift."

Never shall I forget the sensations of my first lift and my introduction to parts of myself unknown or forgotten.

It sent a glow all over the body that was as luscious and cheery as any that have been told of by the Turkish bath enthusiasts, and then—I am afraid it may betray me—an exhilaration purer and more subtle and enduring than that of best champagne. My experience has been a record of many joys, joys that come of soothing and strengthening to a fagged brain, and a weary body, and a pestered soul. I take my lift before my late dinner, when the day's work is done. I carry to it whatever weariness the day has made—of body, of brain, of heart—and I go away another than the man I came. Head-ache, limb-ache, heart-ache are gone, or toned down to easy bearing, and a new counteractant vigor set at work in all the pulses. It seems to get behind the heart, and bolster that first seat of power and action. IT IS THE BEST OF REST.

The Health-Lift is the gradual, easy, complete waking up of every torpid molecule in brain, liver and blood, the sending through and possessing the entire man with a new sense, a re-creating him then and there, so that he turns from his few minutes at his Lift a new creation.

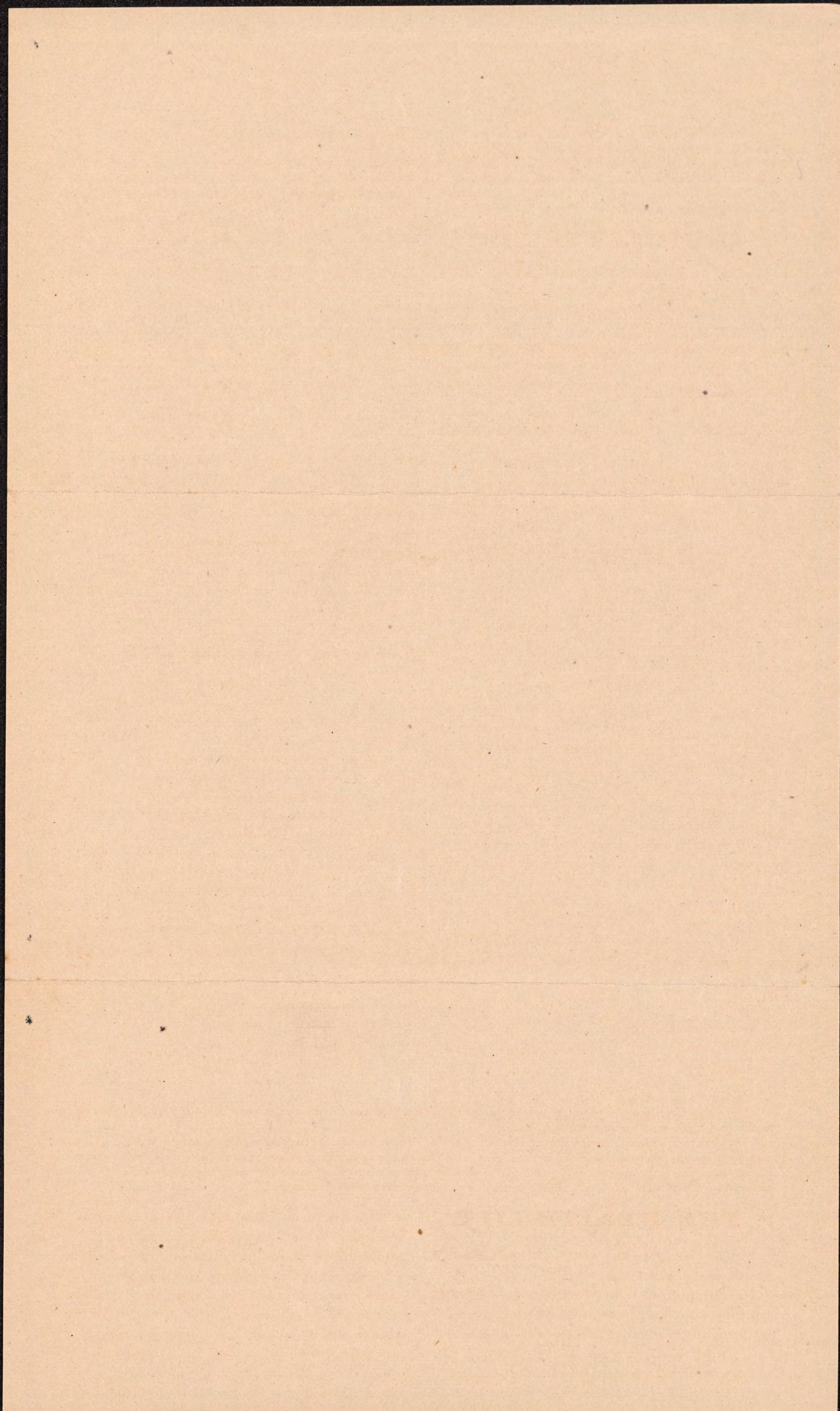
It rouses the universal lethargy of the body; it sends the stagnant blood to the places nature intended it for; routs it from its hiding, its loafing places, and sends it to its duties; it removes surplus fat or distributes it; it decreases the girth of men growing portly and increases the girth of the lungs of men growing hollow; it helps digestion, increases the power and endurance of the voice, and sets one up generally. These are things whereunto I individually bear witness. Others have their other say. As I walk from my lift into the air I feel as if I could carry Atlas—his load—without stooping; I feel life down to the uttermost filament of my lungs, the glory and the joy of mere being. I feel so perpendicular

as if I must be nadir and zenith to the universe. Amid all summer luxury and enjoyment I have felt the need of and have missed my daily lift.

If we were only doing about these bodies somewhat near what we ought to do, every community would have a lift-club and careful attendant. It should be a public institution as much as a school is. It would be to many a man an addition if not to the length of his days to the value of his life, would furnish him with sensations the like of which he has not had since he parted with the suppleness and the enterprise of boyhood. It will renew lost vigor better than voyage or nostrum; but the better work of it may be in keeping one from losing the vigor which at best is slowly regained, in pursuit of which so many lose the patience, perseverance and faith which are vital to recovery. The Lift works slowly, as all real beneficences do, and its demand of you is patient perseverance.

It would be a great thing to have these "Lifts" attached to banks and buildings where many men are employed, who are burning life out at both ends; it would be a great step in political shrewdness to plant them next door to where young men do congregate, rather than the too eager and tempting saloons. Fathers would do well to send their growing boys and girls. Parishes would be wise if they made it a part of their duty to see that their minister took his "Lift," and paid his bill for it to boot, if he be not able fairly to do it himself. And as things go, it would not be a bad idea to attach a HEALTH-LIFT to the church appointments, kitchens and parlors to set up the social thing that a man is even in his religion; why not set the man up in the physical thing that he is, and that his religion needs him to be? A good lift of a Sunday morning before going to church would have a wonderful clearing influence. There would be less sleeping, less indifference, less fault-finding, better chance for real good all around. We should have men, women, ministers roused, wide-awake, alert, good-humored and making the best of themselves and of everybody else. There isn't a great deal of use in talking about worshiping in spirit, when the body is tormenting you with its apathy, and the only real incense you lay upon the altar is an indigestion. I believe in worship and all that, but my creed is not complete until I have written it—I believe in the *Health-Lift*.—Rev. J. F. W. WARE, D.D., of Boston, in *Atlantic Monthly*, February, 1875.

HEALTH-LIFT CO., 46 East 14th St., New York.



The Health-Lift Company,

No. 46 East 14th Street.

General Manager, F. G. WELCH, M. D.

New York, October 1874

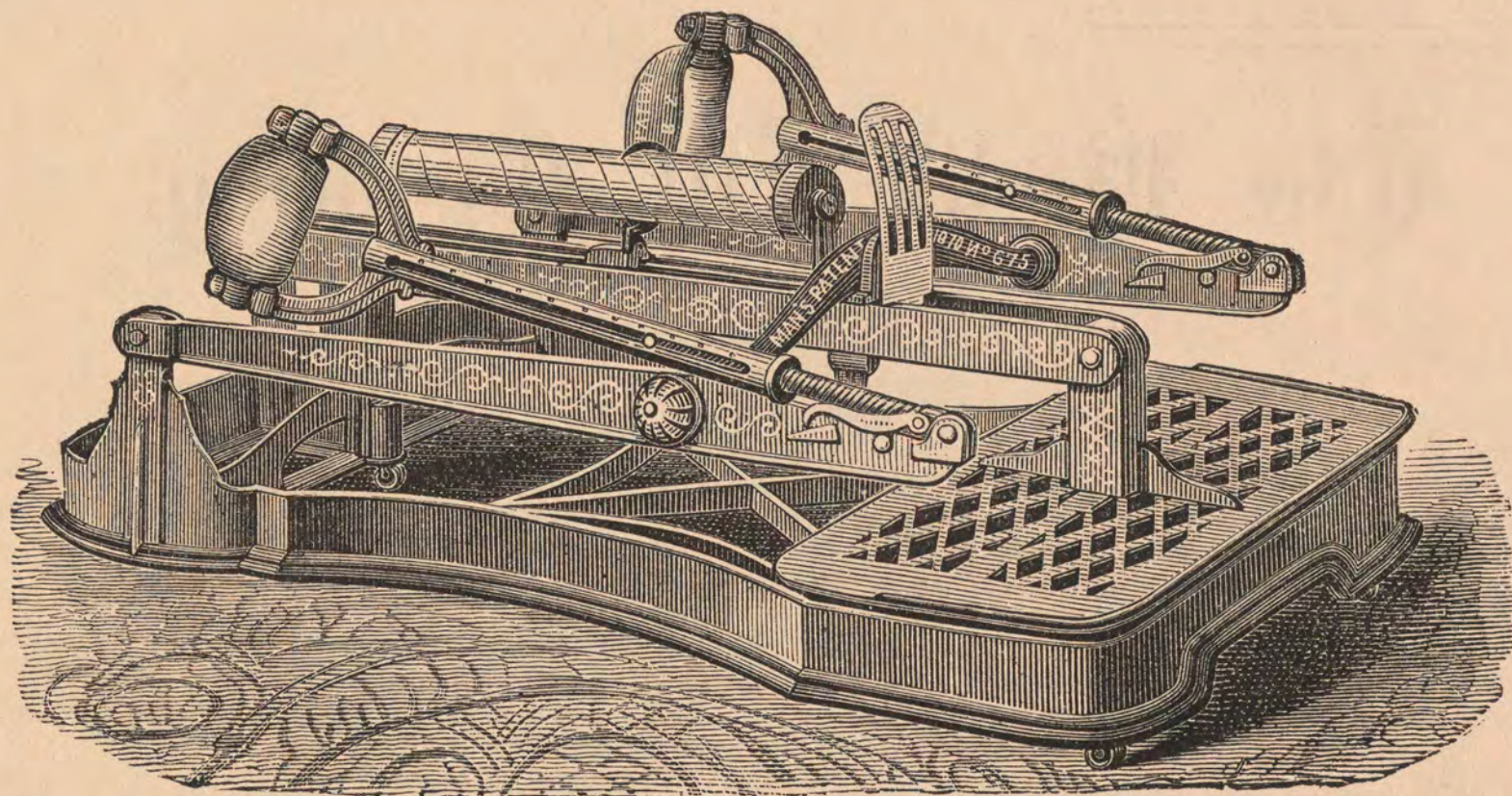
Dear Sir.

In the Spring of 1873 the undersigned sent to the Medical Profession of New York City and vicinity, some special circulars, calling attention to what he had found to be a valuable adjunct to medical treatment, as well as a meritorious system of Physical Training and Exercise. Since that time, as a response, over two hundred physicians have called to investigate, who, together with as many more have sent patients to our rooms for treatment. He has yet to hear of a single case where the result of the investigation to the physician, or of the exercise to the patient has been other than satisfactory. The subscriber considers this unusual response an indication that the system, as well as the manner in which the business is conducted, has the good will and favor of the Medical Profession.

This success has determined the Company to carry on the business through the Profession as the best and only proper channel, and hope to secure universal interest in this important aid to medical treatment.

As our rooms are always at the service of Physicians, it is hoped that none will condemn without investigation, that it will be recommended where the medical adviser deems it desirable, and that there may be some among the Profession who would like to possess one or more machines. The Company solicit correspondence through their Physician and Manager

F. G. Welch, M.D.



The Reactionary Lifter is a convenient instrument for taking all needed exercise in the safest and best possible manner. **Its Weight** is 128 pounds, and when packed, it is about the size of an ordinary trunk. **Its Cost** is ONE HUNDRED DOLLARS. **It can be easily transported** from place to place or trundled about the house on its castors. **It is ornamental** and graceful in appearance, and may be placed without inconvenience in a hall, study, office, bedroom, or parlor. Its handles let down so that it may be easily rolled under a table or bed if desirable. **Construction**—It is made of steel and iron, and is so compactly and firmly put together that it will not break nor wear out, and is not likely to get out of order. It is japanned to save it from rusting. **ITS ADJUSTMENT** for lifting consists in the movement of a slide, and is so simple that a child can readily understand and manage it, and so easy as to require neither time nor effort. It is available for both sexes, and should be used by all the members of the family.

Time Required—Only ten minutes once a day is all that is required for all needed exercise on this apparatus. 1,200 sold (October, 1874). They have given universal satisfaction.

CUMULATIVE EXERCISE.

THE essential principle of Cumulative Exercise, the basis of The Health-Lift, or "Lifting Cure," is the gradual arousing of the latent muscular strength of the individual.

It is a system of voluntary effort in which the person, in each day's exercise, begins with a light weight, sufficient only to exert a few muscles, and gradually increases his efforts as he arouses the neighboring and deep-seated muscles to activity. By this course effects are produced which differ materially from those caused by ordinary exercise or by gymnastic feats. Instead of exciting a tumultuous throbbing of the heart, and a hurried, panting respiration, such as follow unusual exertion in the ordinary methods, the heart's action is rendered more efficient, and consequently, slower and steadier, while the breathing is deeper, fuller, and more regular. The exertion is made with the body erect, and is free from the dangers of ordinary lifting.

The tension or contraction of the muscles is one of the most efficient agencies in promoting the circulation of the blood in the minute blood-vessels (the capillaries) and in the veins; and, through this improved circulation, disease, arising from congestion or inaction of the various vital organs, is relieved, and often permanently cured.

While ordinary exercise generally causes fatigue and exhaustion, a judiciously-conducted *Cumulative Exercise is always followed by a sense of buoyancy, freshness, and invigoration.* This arises from two causes: first, not merely a few superficial muscles have been used over and over again, as in ordinary exercise, but the *great bulk* of the muscles in the entire body has been safely and systematically caused to contract in a slow, gradual, natural manner, by the successively increased efforts and alternations of rest. This gradual, natural contraction, with the proper intervals of relaxation, never causes fatigue or exhaustion. **The second cause of this positive buoyancy and freshness is the increased absorption of oxygen by the contracting muscles. While muscles are acting they absorb from the blood flowing through them over six times as much oxygen as they do when at rest. This fact explains not only the temporary effect under consideration, but the permanent valuable results which follow the regular persistent use of this system of exercise.**

Oxygen we all know to be the great sustainer of animal life. Its proper supply to, and absorption by, the various tissues of the body are absolutely essential to their healthy condition and action. And, in thus securing its six-fold increased absorption, not by a few, but by the majority of the muscles, an increased demand is made on the respiratory capacity, which results in a more thorough elimination of poisonous gases and waste matter, a more perfect aeration of the blood, and a more vigorous, healthy tone of all the vital processes.

LIFTING AS A REMEDIAL AGENT.

"THE first result of exercise is to equalize, the second to invigorate, the third to reconstruct and build up the tissues of the body. In the process of constant training these results are inevitable, and they necessarily involve the expulsion of whatever disease is present in the system."

"The skin, which had been clogged with decaying matter, yellow with bile, or white for lack of capillary circulation, acquires the natural glow and color of health. The face becomes fuller and rounder in its outlines (the uniform and natural indications of vigorous vital organs), and acquires that beauty of form, and lively, animated expression, which can only result from healthy, physical, moral and mental conditions."

"Nor is the effect, tone and character of the mind and will less apparent. The vacillation and weakness peculiar to an unbalanced condition come to an end. The step is firm, and the will determined. Consciousness of power underlies and promotes all the elements of a perfect manhood and womanhood. Persons who vainly grappled with health-destroying habits, or who, in consequence of the weak and abnormal condition of their mental faculties, have had no desire to resist them, may now oppose them successfully."

"The system is purified from disease; morbid matters are expelled from the system; the patient, instead of becoming weaker, is made stronger by the process, and is protected against relapse and subsequent assaults of disease by his greater degree of organic power. His vigor of mind and body is greatly increased, and he enters upon his daily duties anew, with prospects of longer life, business success, and greater usefulness in whatever avenue he may enter."

"The curative power is inherent in the human organism. It is by developing and increasing this power by a *correct system of physical culture* that a cure is effected. In spite of our constant transgressions of nature's laws, she is ever striving to neutralize the effects of our errors, and to make us wiser and more healthy. We have only to meet nature half-way to become constant in progress toward physical, mental and moral perfection."

"He who desires the best results will be constant in his obedience."

"In the attainment and preservation of health we reap as we sow."

"Nature cures disease through an inherent recuperative power in the human system."

"By furnishing the conditions for the action of this recuperative power alone can nature be aided."

"The most essential condition is Judicious Exercise."

TESTIMONIALS FROM PHYSICIANS.

From **OLIVER WENDELL HOLMES, M.D.,**
of Boston, Mass.

My three months' experience of the Health-Lift has been entirely satisfactory. It furnishes a concentrated form of exercise which I have found salutary, agreeable and exhilarating. It calls the blood into the muscles and leaves them ready for further action, so that I have found myself more disposed to take a long walk after four or five lifts than before.

* * * * *

I may add that the particular apparatus used at your rooms, "The Reactionary Lifter," is a most ingenious, convenient, compact and serviceable arrangement, by which the lifter's own weight is made to do service, and by an easy and simple adjustment of leverage, to furnish a resistance to be overcome all the way from a hundred to a thousand pounds and more.

From **WM. W. MORLAND, M.D., Fellow of the Mass.**
State Medical Society.

After a daily trial, under your directions, of the Health-Lift, during two months, it gives me great pleasure to express to you the very favorable impression it has made upon me.

Lifting, as I now do, five hundred pounds, I have never felt the least strain, nor any other injurious effect. On the contrary, the sensations, after lifting, are only those of exhilaration, lightness, increase of muscular force, and a pleasant acceleration of the circulation. Those whom I have sent to you bear the same testimony. In fact, every one who gives the Reactionary Lifter a fair trial, becomes fascinated with it.

From **DAVID WOOSTER, M.D., of San Francisco,**
Cal.

The beneficial effect of the Health Lift is appreciated, when it is understood that it is only by muscular contraction that arterial capillaries are emptied, and that, immediately after such contraction, these same capillaries must be refilled with arterial blood fresh from the lungs, through the left side of the heart—that is, newly oxygenated blood. Constipation is cured by this process—that is, by completely emptying the small arteries of the alimentary canal during muscular contraction, which, by a well-known physiological law, is followed by increased peristaltic action. This explains how the "Lift" cures functional diseases of the liver, spleen, pancreas, stomach, etc. It cures by causing a more complete renewal of arterial blood in the finest capillaries than can be secured by any other known means.

The method of Cumulative Exercise, as practiced on the Reactionary Lifter, is most economical in time, requiring only ten minutes each day, and no change of dress for either sex, and is most thorough in uniform, simultaneous tautening and development of all the muscles of the body. In response to your inquiry as to my opinion of their merits, I do not hesitate to unqualifiedly commend the Exercise and the Apparatus to all persons suffering from dyspeptic or rheumatic affections, and to every person of sedentary employment, who—now possessing average or "passable" health—desires to obtain and enjoy the fullest vigor and efficiency of which his (or her) constitution is capable.

It gives pleasure to present my testimony in behalf of

MANN'S HEALTH-LIFT.

It is the most perfect compendium of exercise imaginable; particularly adapted to those of studious or sedentary habits, and to persons suffering from uterine and kindred weaknesses.

R. C. MOFFAT, M.D.,

17 Schermerhorn Street, Brooklyn.

August 20, 1873.

S. H. MANN, Esq., Brooklyn Agent, *Health-Lift Rooms,*
Brooklyn, N. Y.

Dear Sir—From much experience, I have formed the opinion that the Health-Lift Exercise is one of the quickest, cheapest, and most thorough known.

By the lift-act you accomplish many things. You control the arteries and veins effectually. You equalize the circulation in all the blood-vessels, and thus relieve congestions, the great source of debility and suffering with most invalids. But much more than this; it controls eminently the vital forces, and equalizes their distribution. Parts having an excess of vital action are relieved, and those deficient are most happily supplied.

September 6, 1873.

LESTER KEEP, M.D.

From **Dr. GEORGE B. WINDSHIP, "The Strong**
Man."

I am more and more convinced that your apparatus for lifting—"The Reactionary Lifter"—is the best yet put into the market. I should consider my gymnasium quite incomplete without it.

Boston, Mass., July 23, 1873.

From **Prof. F. G. WELCH, M.D.,**

(For 7 years in charge Dept. Physical Culture, Yale College.)

THE REACTIONARY LIFTER, purchased from you some time since, gives excellent satisfaction. I find that in one or two series of lifts, daily occupying only a few minutes, I get better results than from one or two hours in the gymnasium. The lift-effort gives a uniform and simultaneous exercise to the whole muscular system, and as the weakest muscles must govern the amount to be lifted, there can be no possible danger. As an exercise, it is a decided advantage over any or all other forms. Besides this, its marked effect on the circulation of the blood, even to the capillaries and most remote parts of the system will render it a valuable remedial agent.

The admirable apparatus by which such results are secured must commend itself for its durability, cheapness, and elegance, as well as its ease and accuracy of adjustment. Its adaptation and convenience for ladies and family use, should make it a necessity in every household.

I heartily commend it to public favor as a safe, thorough, and efficient mode of exercise, and, in many instances, a safe method of cure.

F. G. WELCH, M.D.

Yale College, New Haven, Conn., April, 1872.

TESTIMONIALS FROM EMINENT INDIVIDUALS.

From GEORGE TICKNOR CURTIS, the Eminent Lawyer.

NEW YORK, Oct. 20th, 1873.

I have used the Reactionary Health-Lift Machine for nearly a year, and consider it the best mode of taking special exercise that I have ever known. Its effect in improving appetite, digestion, and sleep, is wonderful. It is particularly valuable for the refreshment it affords to all who work with their brains, in whatever form of occupation; restoring at once the nervous energy when exhausted by labor or any other excitement.

He who can lie down to sound sleep after an exhausting day, of toil, and can rise to another day of work, morally certain that he has the means of securing another night of repose, has made an important acquisition, which I am persuaded is within the reach of any one who will avail himself of the benefits of this Machine.

Extract from a Letter from JNO. P. GULLIVER, D.D., Late President Knox College.

* * * * * I have no hesitation in commending the Health-Lift. No claim is set up for it which is unscientific or impracticable. * * * * Its effects are wonderful. * * * The stimulus it gives to the circulation, to the lungs, the stomach, the liver, and the other vital organs, is such as to develop, with great rapidity, the power of the physical system. * * * * *

From Hon. GEO. S. HILLARD, of Boston, Mass.

I have used the Lifting Cure under the direction of Dr. Paul, Boston Agent for the Health-Lift Co., for about six months, and can recommend it as a good and healthy form of exercise.

It quickens the circulation, increases the muscular force, and gives to the whole system a sense of renewed vigor. It is particularly to be commended to those whose habits are sedentary.

From Rev. ROBERT COLLYER, the Blacksmith Minister of Chicago.

I went to the Health-Lift because, notwithstanding in otherwise robust health, the exertion necessary to reach with my voice every part of our large church began to fatigue and distress my lungs and chest.

I found the lifting of great use, and was soon able to do easily what before cost much effort.

From GEO. F. ROOT, Esq., author of "Battle-Cry of Freedom," &c.

I had been consigned by some of the most eminent physicians of both schools to, at best, a few remaining years of hopeless invalidism. Nearly six years ago I began the system of Cumulative Exercise—at first on a Butler Lifting Machine, then on the Health-Lift Machine with side-handles, and for the past year on the Reactionary Lifter.

I cannot hope to say anything emphatic enough to convey the strength of my belief that to this exercise I owe not only my present health, but my life.

The work I have done in the past five years must speak for me.

From ELDER MILES GRANT.

"We have visited the 'Health-Lift' rooms, at 415 Montgomery Street, San Francisco, Cal., and were delighted with the newly-invented machine of Rev. Charles H. Mann, of Orange, N. J. It is admirably adapted for the object designed. It is cheaper, smaller, more easily adjusted, and more effective for good than anything of the kind we have ever seen. *It is a well settled fact that the 'Lifting Cure' is one of the best means of restoring and preserving health.* We would recommend all to try it who can have the opportunity. Every family should have one of these 'Reactionary Lifters,' as they are called. If their value was only known, many families would be willing to lay aside their costly furniture, or apparel, for the sake of getting the 'Reactionary Lifter.' We have no interest in speaking on this subject but the welfare of our friends. We know whereof we affirm."

From Rev. CHAUNCEY GILES, N. Y.

* * * * "I like it very much; I am lifting on it regularly every night, just before going to bed, and I sleep better.

"The convenience of having it in the house is very great to me. I am sure that any man or woman of sedentary habits will find his or her strength greatly increased, and ability to work much enlarged by using it.

"With regard to the value of this system of Exercise, there can be no reasonable doubt. I believe I shall live ten years longer through it, and can do twice as much work in the same amount of time while I do live."

From Prof. EDWARD HITCHCOCK, Amherst College, Amherst, Mass.

* * * Your Lifting Apparatus has been in use in our Gymnasium for about two years. I began to allow our students to use it, with some fear, thinking they would overlift and strain themselves. But now the apparatus remains, like all our other appliances, in the Gymnasium, free to all our students to use whenever they please, and it is used constantly; but I have never heard of a student who has received any harm from it; but, on the other hand, only good results have been obtained. It seems a most admirable way of using the whole strength of the body at once, and with excellent results.

From COL. WM. E. VAN WYCK, Pres. N. Y. Athletic Club.

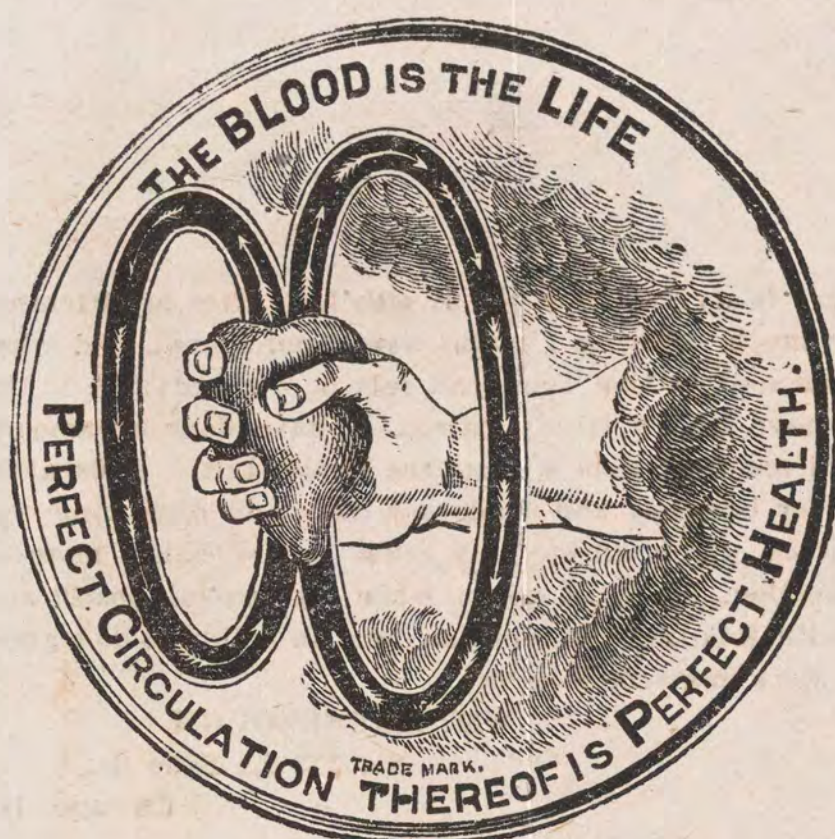
NEW YORK, March 10th, 1874.

HEALTH-LIFT Co.

DEAR SIR:—After many years' practice in the various forms of gymnastics, and having latterly thoroughly tested that form known as the Health-Lift, I am free to say, that, without condemning other systems, this, for busy men, is superior to all. Its advantages over the old schools are very apparent. Only ten minutes daily are required. It refreshes, invigorates, and is a wonderful tonic to the whole nervous and muscular system. It is safe and agreeable, and gives a thorough and harmonious exercise to the whole body.

It has a marked influence upon the circulation of the blood, and assists the proper performance of all the functions of the body.

The REACTIONARY LIFTER is preëminently the Machine on which to take this system of exercise



The Health-Lift

REDUCED TO A SCIENCE.

A THOROUGH GYMNASTIC SYSTEM

In Ten Minutes Once a Day.

Health Restored and Muscular Strength Developed by Equalizing and Invigorating the Circulation. The Result of Twenty Years' Practical and Theoretical Study and Experiment. The Only Scientific System of Physical Training. Minimum Time for Maximum Results.



CUMULATIVE EXERCISE,

POPULARLY KNOWN AS

"The Health Lift," or "Lifting Cure,"

Whilst improving the Health, will **Double the Actual Strength** in three months:—occupies only **Ten Minutes** once a day:—furnishes a safer and more valuable mode of **Physical Training** than the gymnasium:—is adapted to both **Ladies and Gentlemen**, requiring no change of dress:—

THE REACTIONARY LIFTER

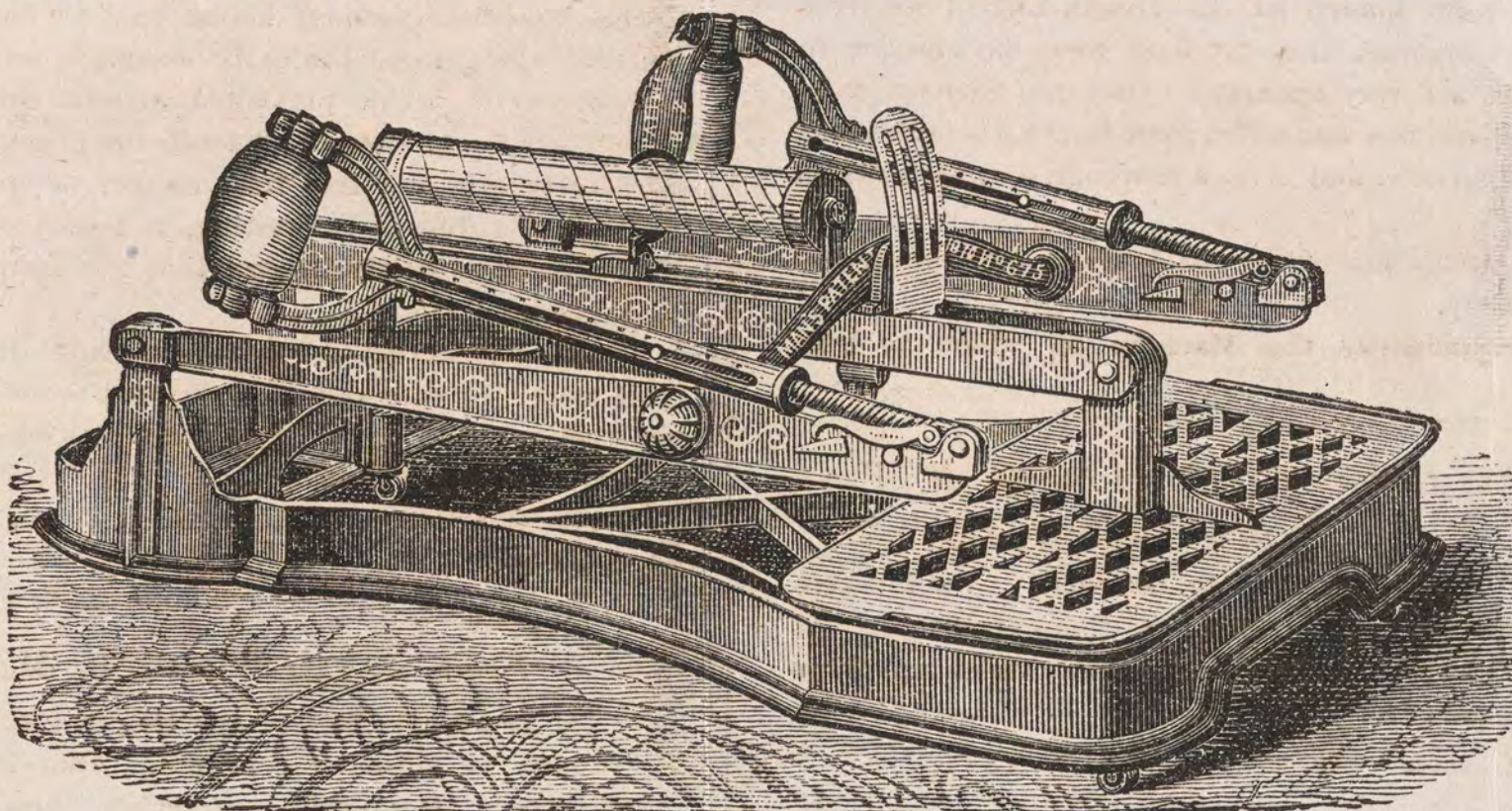
Is a convenient instrument for taking all needed exercise in the safest and best possible manner.

Its Weight is 128 pounds, and when packed it is about the size of an ordinary trunk.

Its Cost is one hundred dollars, which is just one-third of the price of the only other lifting machine now in the market.

Convenience in Handling—It can be easily transported from place to place, or trundled about the house on its castors.

Appearance and Convenience about a House—It is ornamental and graceful in appearance, and may be placed without inconvenience in a hall, study, office, bedroom, or parlor. Its



does not fatigue or exhaust, but, by equalizing and improving the **Circulation of the Blood**, refreshes and invigorates:—and, finally, is daily recommended by leading Physicians to those suffering from want of tone and vigor, or from Dyspepsia and other forms of Indigestion, or from various diseases of the Nervous System, or from the class of ailments caused by torpor or congestion of the Liver—in short, it is warmly approved **by the Medical Profession as the most Efficient, Safe, and Simple means of preventing Diseases arising from Sedentary Habits.**

handles let down so that it may be easily rolled under a table or bed if desirable.

Construction—It is made of steel and iron, and is so compactly and firmly put together that it will not break or wear out, and is not likely to get out of order. It is japanned to save it from rusting, and is beautifully finished in chocolate and gold.

Its adjustment for lifting consists in the movement of a slide, and is so simple that a child can readily understand and manage it, and so easy as to require neither time nor effort.

It is available for both sexes, and should be used by all the members of the family.

Time Required—Only ten minutes once a day is all that is required for all needed exercise on this apparatus.

CUMULATIVE EXERCISE.

THE essential principle of Cumulative Exercise, the basis of The Health-Lift, or "Lifting Cure," is the gradual arousing of the latent muscular strength of the individual. It is a system of voluntary effort in which the person, in each day's exercise, begins with a light weight, sufficient only to exert a few muscles, and gradually increases his efforts as he arouses the neighboring and deep-seated muscles to activity. By this course effects are produced which differ materially from those caused by ordinary exercise or by gymnastic feats. Instead of exciting a tumultuous throbbing of the heart, and a hurried, panting respiration, such as follow unusual exertion in the ordinary methods, the heart's action is rendered more efficient, and consequently, slower and steadier, while the breathing is deeper, fuller, and more regular. The exertion is made with the body erect, but the knees bent at beginning, so that, in effect, the straightening of the knees produces a *gradual tension of the muscles*, as the weight is raised, which is essentially different from ordinary lifting, and *free from its dangers*.

This tension or contraction of the muscles is one of the most efficient agencies in promoting the circulation of the blood in the minute blood-vessels (the capillaries) and in the veins; and, through this improved circulation, disease, arising from congestion or inaction of the various vital organs, is relieved, and often permanently cured.

While ordinary exercise generally causes fatigue and exhaustion, a judiciously-conducted Cumulative Exercise is always followed by a sense of buoyancy, freshness, and invigoration. This arises from two causes: first, not merely a few superficial muscles have been used over and over again, as in ordinary exercise, but the *great bulk* of the muscles in the entire body has been safely and systematically caused to contract in a slow, gradual, natural manner, by the successively increased efforts and alternations of rest. This gradual, natural contraction, with the proper intervals of relaxation, never causes fatigue or exhaustion.

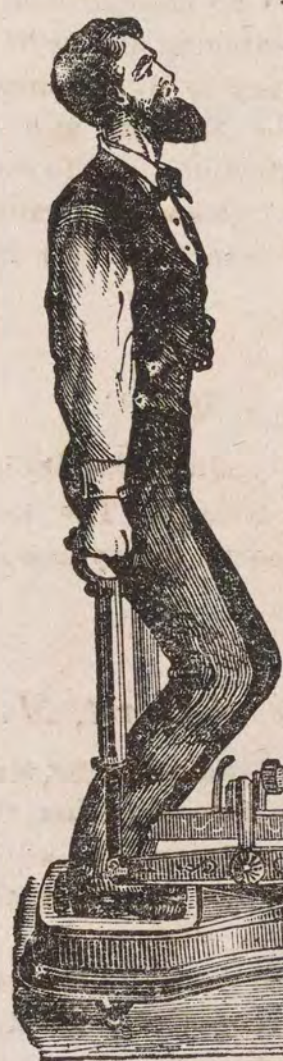
The second cause of this positive buoyancy and freshness is the *increased absorption of oxygen by the contracting muscles*. While muscles are acting they absorb from the blood flowing through them *over six times as much oxygen as they do when at rest*. This fact explains not only the temporary effect under consideration, but the *permanent valuable results which follow the regular persistent use of this system of exercise*.

Oxygen we all know to be the great sustainer of animal life. Its proper supply to, and absorption by, the various tissues of the body are absolutely essential to their healthy condition and action. And, in thus securing its six-fold increased absorption, not by a few, but by the majority of the muscles, an increased demand is made on the respiratory capacity, which results in a more thorough elimination of poisonous gases and waste matter, a more perfect aeration of the blood, and a more vigorous, healthy tone of all the vital processes.

THE RATIONALE OF LIFTING:

LIFTING is a system of harmonious and simultaneous exercise of the whole body. Every muscle is brought into use at once, and each in proportion to its relative strength. And so connected are the vital organs with the muscular tissue of the body, that when all the muscles act simultaneously and harmoniously the organs themselves receive their appropriate amount of exercise. So distributed is this effort that there is no danger of injurious strains or rupture. It strengthens the weak organs, and expels disease by a gradual, co-operative exercise of the whole body. The strength of the whole body is augmented and equalized, the weak parts are built up, disease is expelled, and the individual becomes uniformly strong, and consequently healthy. It develops power chiefly at the vital centers. All the voluntary and respiratory muscles are brought into harmonious play, expanding the chest, augmenting the breathing capacity, aerating the blood, equalizing the circulation, warming the extremities, and thus vitalizing every part; and by determining action and circulation to the whole surface, increasing the relative amount of blood in the extreme capillary vessels, thereby removing internal congestions wherever located, and accelerating the nutrition of every organ. When these reasons are fully understood, the fact that many persons have, by the simple process of lifting, more than doubled their strength in three months will not be surprising.

It is a true exercise, a correct developing agency, a safe method of cure. It is an equalizer and invigorator—a reconstructor of the tissues of the body and brain. It invokes all hygienic agencies, especially pure air, pure water, healthful food, sun, air, and water baths, abundant sleep, rest, and recreation. It increases the healthy action of the brain correspondingly with that of the body. All the elements of a perfect manhood are increased, including not only intellectual vigor, but moral power and social purity. For as certainly as disease favors an abnormal condition of the mind as well as the body, so surely does an increase of health and strength become a promoter of virtue. In a word, it is putting a man in possession of himself.



READY TO LIFT.



LIFTED.

PHILADELPHIA AGENCY:

1516 CHESTNUT STREET.

226 SOUTH THIRD STREET.

TESTIMONIALS.

From GEO. TICKNOR CURTIS, the Eminent Lawyer.

NEW YORK, Oct. 20th, 1873.

I have used the Reactionary Health-Lift Machine for nearly a year, and consider it the best mode of taking special exercise that I have ever known. Its effect in improving appetite, digestion, and sleep, is wonderful. It is particularly valuable for the refreshment it affords to all who work with their brains, in whatever form of occupation: restoring at once the nervous energy when exhausted by labor or any other excitement.

He who can lie down to sound sleep after an exhausting day of toil, and can rise to another day of work, morally certain that he has the means of securing another night of repose, has made an important acquisition, which I am persuaded is within the reach of any one who will avail himself of the benefits of this Machine.

Extract from a Letter from JNO. P. GULLIVER, D.D. (late President Knox College).

* * * * * I have no hesitation in commending the Health-Lift. No claim is set up for it which is unscientific or impracticable. * * * * Its effects are wonderful. * * * * The stimulus it gives to the circulation, to the lungs, the stomach, the liver, and the other vital organs, is such as to develop, with great rapidity, the power of the physical system. * * * * *

From COL. WM. E. VAN WYCK, Pres. N. Y. Athletic Club.

NEW YORK, March 10th, 1874.

HEALTH-LIFT CO.

DEAR SIR:—After many years' practice in the various forms of gymnastics, and having latterly thoroughly tested that form known as the Health-Lift, I am free to say, that, without condemning other systems, this, for busy men, is superior to all. Its advantages over the old schools are very apparent. Only ten minutes daily are required. It refreshes, invigorates, and is a wonderful tonic to the whole nervous and muscular system. It is safe and agreeable, and gives a thorough and harmonious exercise to the whole body.

It has a marked influence upon the circulation of the blood, and assists the proper performance of all the functions of the body.

The REACTIONARY LIFTER is preëminently the Machine on which to take this system of exercise.

From REV. ROBERT HOLDEN, Rector of Trinity School, N. Y.

NEW YORK, May 17th, 1873.

The benefits I have derived from the Health-Lift are immense. Amid severe labors, which would otherwise have completely prostrated me, this exercise has not only given me strength to go through with them, but has, at the same time, caused me to enjoy a degree of physical health unusual to me for years.

From REV. A. J. FROST, D.D., Pastor University Place Baptist Church, Chicago, Ill.

I know of nothing so perfect for determining blood from the head after protracted brain-work as Mann's Health-Lift.

The blood that goes surging into the brain during the hours of mental application is made to send its current downward to the muscles at once, and give immediate relief to the tired and aching head. It fact, it seems as if the weariness had been wiped out of the head, so immediate and refreshing is the effect.

I regard this Machine of immense value to all persons of sedentary habits, and especially to dyspeptics, and those whose nerve-force is well nigh exhausted.

Three months of the Health-Lift more than doubled the mobility of my chest, by actual measurement, and increased its girth nearly four inches.

GEO. R. CHITTENDEN,
Bank Building, 53 Dearborn St.,
Chicago, Ill.

I find in the Reactionary Lifter all I could wish. Have experienced a very wonderful toning up of the muscular system. It takes the place of the former necessity for long walks, and has proved a wonderful economy of time. It has, in positive benefit, exceeded all my expectations.

REV. S. H. HOWE,
Georgetown, D. C.

The undersigned, short-hand reporters, residing in San Francisco, have for a longer or shorter period attended at the Health-Lift, 415 Montgomery Street, and have derived great benefit from the Exercise.

They cordially commend the method and the Apparatus to all persons of sedentary employment. It steadies the nerves, and tones up the whole physical system.

CHARLES A. SUMNER,
WM. M. CUTLER,
HERVEY DARNEAL,
B. C. BROWN.

PHILADELPHIA AGENCY,

It took me two years to get fairly started at the Health-Lift, after my attention was first attracted to it. How much suffering I might have been spared, and what I might be now, if I had commenced at that time, can only be guessed; but, in the eight months during which I have been a steady patron, I have done an amount of work I am confident I could not have done without the Health-Lift. A flatulent dyspepsia, which unfitted me for business, and made my days and nights misery, is entirely cured; and Rheumatism, which affected my knees and shoulders more or less at every change of the weather, is almost gone; while my general health and strength have improved, and with this improvement has come an ability to do a great deal more work, and to do that work more comfortably.

WM. HAUSBROUGH,
No. 133 La Salle St.,
Chicago, Ill.

From ABNER S. BRADY, Professor of Calisthenics and Gymnastics. Late proprietor and instructor of the Seventh Reg't Gymnasium, N. Y.; Brady's Gymnasium, Washington, D. C., and Jersey City, N. J., &c.

I have personally tested the system of gymnastics known as the Health-Lift or Lifting Cure—or, more recently and scientifically, as Cumulative Exercise. Without attempting a detail of its philosophy, my understanding of it may be summed up briefly, thus: By a series of gradually-increasing muscular efforts, alternating with appropriate rests, a larger number of muscles are safely brought into action than is possible where this principle of CUMULATION is disregarded, as it is in ordinary systems of exercise.

Its effects, as explained by medical men, are produced through the medium of the Circulation of the Blood, which is equalized and invigorated to an extent which seems incredible without actual trial. Through this equalized and improved circulation the general health is benefited; and disease of the nervous system, of the digestion, etc., is thus prevented, arrested, or cured.

When I add that the Exercise requires only ten minutes once a day, that it is absolutely safe and free from danger of strain or other injurious effect, and that, instead of tiring or exhausting, it positively rests and refreshes one, I think I have said enough to satisfy any one that the matter is well worth the brief time it will take to investigate it.

As a "professional," I have no hesitation in saying that, simply as an Exercise, it is more thorough and efficient, calls more muscles into action, and will keep a man in "better condition" by its ten minutes once a day, or every other day, than the usual hour or two in the gymnasium.

The Reactionary Lifter, which is the Apparatus I use, is cheap, simple, and durable.

From DAVID WOOSTER, M.D., of San Francisco, Cal.

The beneficial effect of the Health-Lift is appreciated, when it is understood that it is only by muscular contraction that arterial capillaries are emptied, and that, immediately after such contraction, these same capillaries must be refilled with arterial blood fresh from the lungs, through the left side of the heart—that is, newly oxygenated blood. Constipation is cured by this process—that is, by completely emptying the small arteries of the alimentary canal during muscular contraction, which, by a well-known physiological law, is followed by increased peristaltic action. This explains how the Lift cures functional diseases of the liver, spleen, pancreas, stomach, etc. It cures by causing a more complete renewal of arterial blood in the finest capillaries than can be secured by any other known means.

The method of Cumulative Exercise, as practiced on the Reactionary Lifter, is most economical in time, requiring only ten minutes each day, and no change of dress for either sex, and is most thorough in uniform, simultaneous tautening and development of all the muscles of the body. In response to your inquiry as to my opinion of their merits, I do not hesitate to unqualifiedly commend the Exercise and the Apparatus to all persons suffering from dyspeptic or rheumatic affections, and to every person of sedentary employment, who—now possessing average or "passable" health—desires to obtain and enjoy the fullest vigor and efficiency of which his (or her) constitution is capable.

From DR. GEO. B. WINDSHIP, "The Strong Man."

BOSTON, Mass., July 23d, 1873.

I am more and more convinced that your Apparatus for lifting—The Reactionary Lifter—is the best yet put into the market. I should consider my gymnasium quite incomplete without it.

From PROF. EDWARD HITCHCOCK, Amherst College, Amherst, Mass.

* * * Your Lifting Apparatus has been in use in our Gymnasium for about two years. I began to allow our students to use it, with some fear, thinking they would overlift and strain themselves. But now the Apparatus remains, like all our other appliances, in the Gymnasium, free to all our students to use whenever they please, and it is used constantly; but I have never heard of a student who has received any harm from it; but, on the other hand, only good results have been obtained. It seems a most admirable way of using the whole strength of the body at once, and with excellent results.

1516 CHESTNUT STREET,
226 SOUTH THIRD STREET.

HEALTH EXERCISE,

CONVENIENT TO ALL,

UTILITY AND AMUSEMENT COMBINED.

DR. BARNETT'S CHEST EXPANDER,

For light and heavy gymnastic exercise, especially adapted to the drawing room, for classes of ladies and gentlemen.

DR. BARNETT'S **Chest Expander & Parlor Gymnasium**



THE QUADRILLE,

These Quadrilles can be adapted to the ordinary Quadrille figures, as explained in the Manual of Instruction.

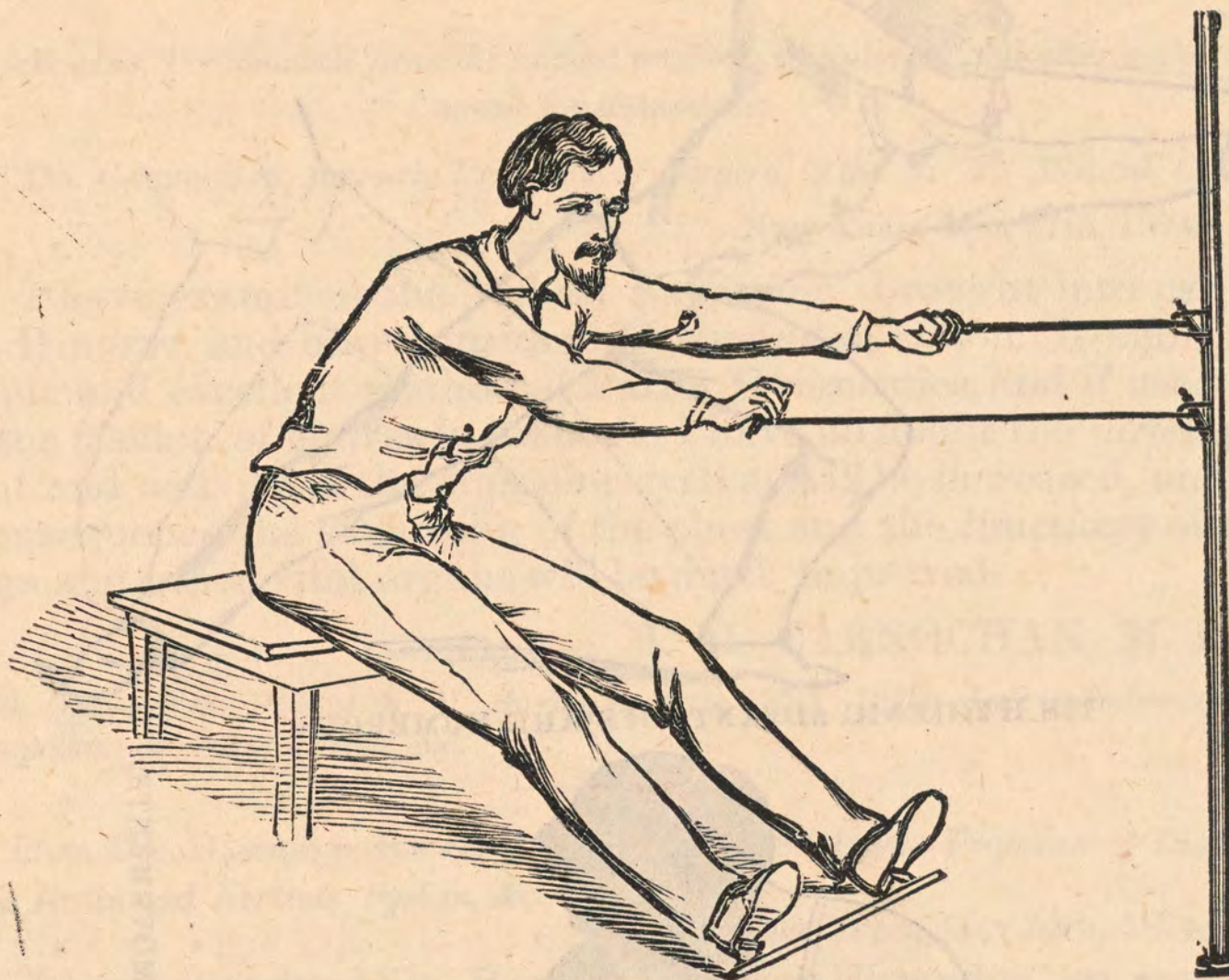
Has now been largely employed for some years and its value attested, not by hundreds but by THOUSANDS of persons who have been benefited by its use, it has been ADOPTED BY THE BOARD OF EDUCATION OF THE CITY OF NEW YORK, and is used by the children of the Public and best Private Schools and Colleges of this and other cities. It is recommended and appreciated as an article of necessity as A CHEST & LUNG PROTECTOR as well as for toning and strengthening the entire system



For the Young, Old and Middle Aged.
For the Narrow Chested.
For the Round Shouldered.
For Weak Lungs.
For Dyspeptics.
For Persons afflicted with Spinal Distortions.
For Ladies sitting at the Sewing Machine.
And for all who are engaged in Sedentary Em-
ployment.

—ooo—

There is no cheaper, more convenient or effective means of exercise than that presented by this apparatus; It is neither cumbersome nor expensive and does not require a place especially adapted for its use. It is light and portable and can be carried in the pocket when traveling, or laid upon the desk beside you while reading or writing.

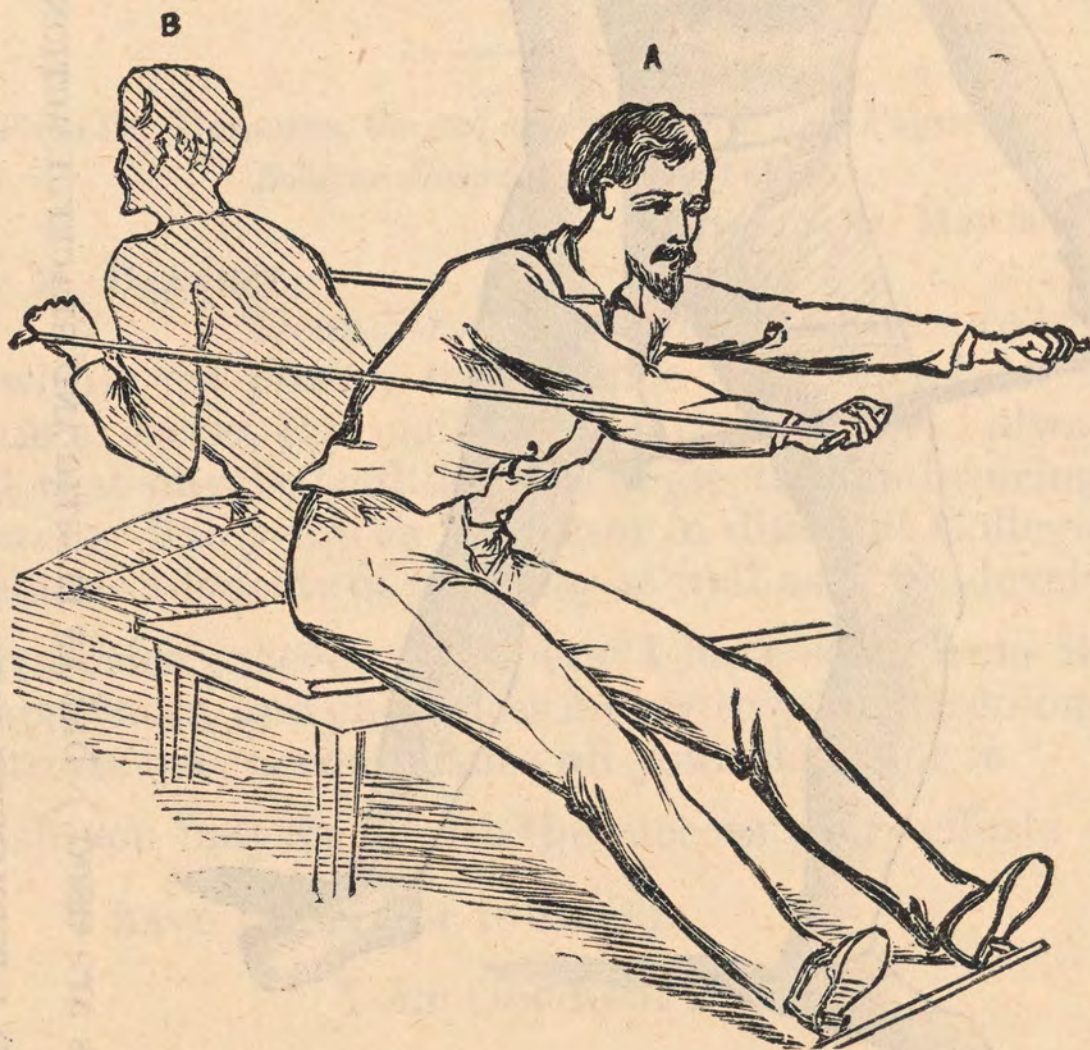


THE ROWING EXERCISE.

The same effect is obtained by this as rowing with a pair of oars.

IT CAN BE USED AT ANY TIME.

It can be used either sitting or standing. It is suitable for the weak. It is suitable for the strong. It rests the tired brain as well as the tired body.



THE ROWING EXERCISE.

It invigorates and refreshes the whole system. It may be used for indoor amusement. It may be used for outdoor amusement. It may be used at all seasons.

From DR. MOTT, Professor of Surgery, Bellevue Hospital Medical College,

NEW YORK, JUNE 4th, 1874.

DR. S. M. BARNETT,

Dear Sir;—The simple method of physical exercise which you have so successfully introduced deserves every encouragement, being well adapted for persons of both sexes and of all ages, and it gives me pleasure to add my recommendation to the numerous testimonials you have already received.

As a proof of my approval of it I can further say, that for several years I have been in the habit of advising my patients requiring systematic exercise to procure your apparatus.

Very truly Yours,

ALEX. B. MOTT, M. D.

—ooo—

From DR. WOOD, Professor of Surgery, Bellevue Hospital Medical College.

NEW YORK, JULY 13th, 1874.

DR. S. M. BARNETT,

My Dear Doctor;—I have read Dr. Doremus' note in reference to your system of instruction in physical culture, I agree with him fully in saying that the muscular system should be subject to thorough discipline as well as the mental faculties. I have used in my own family your excellent appliances for the purpose, and can highly recommend them.

Very Respectfully Yours,

JAMES R. WOOD, M. D.

—ooo—

From DR. DIO LEWIS, Professor and author of various Works on Physical Culture.

BOSTON, JUNE 17th, 1868.

MY DEAR SIR;—Your new device for exercising the muscles of the upper half of the body is an admirable one. The great deficiency in the artificial means of exercise thus far introduced, is a lack of adequate training for the extensor muscles. Our gymnastic training falls upon the flexors, which, as in the ordinary avocations of life, receive nineteen-twentieths of the work, scarcely need providing for in systems of artificial training. This contrivance of yours falls almost exclusively upon the extensor muscles. In this view it fills an important niche, and is really deserving of popular patronage.

I should be very glad to see your invention introduced into our public and private schools. Its perfect adaption to home exercise, for persons of both sexes and of all degrees of strength,

cannot fail to impress favorably every thoughtful person who may examine it. I shall be happy to assist you in any and every way in my power to introduce your Chast Expander.

I am, very truly yours,

DIO LEWIS.

—ooo—

From the HON. HENRY KIDDLE, A. M.

DEPARTMENT OF PUBLIC INSTRUCTION,

Superintendent's Office,

146 Grand Street, New York, June 19th, 1871.

The "Parlor Gymnasium and Chest-Expander" of Dr. Barnett has been used in very many of the public schools of this City, and has been found a very valuable aid in conducting exercises for physical culture. No apparatus that I have seen seems to be so well calculated to promote the object designed, while the exercises with it are agreeable, graceful, and appropriate for schools.

HENRY KIDDLE.

City Superintendent.

—ooo—

From MAJOR GEN. WEBB, President of the College of the City of New York,

NEW YORK, JAN., 20th, 1874.

I find after a month's trial that the Students of the higher classes are very much improved physically, by the use of Dr. Barnett's Chest Expander. I shall continue to use them and recommend their daily use in all schools.

ALEX. S. WEBB,

Pres't. N. Y. College.

—ooo—

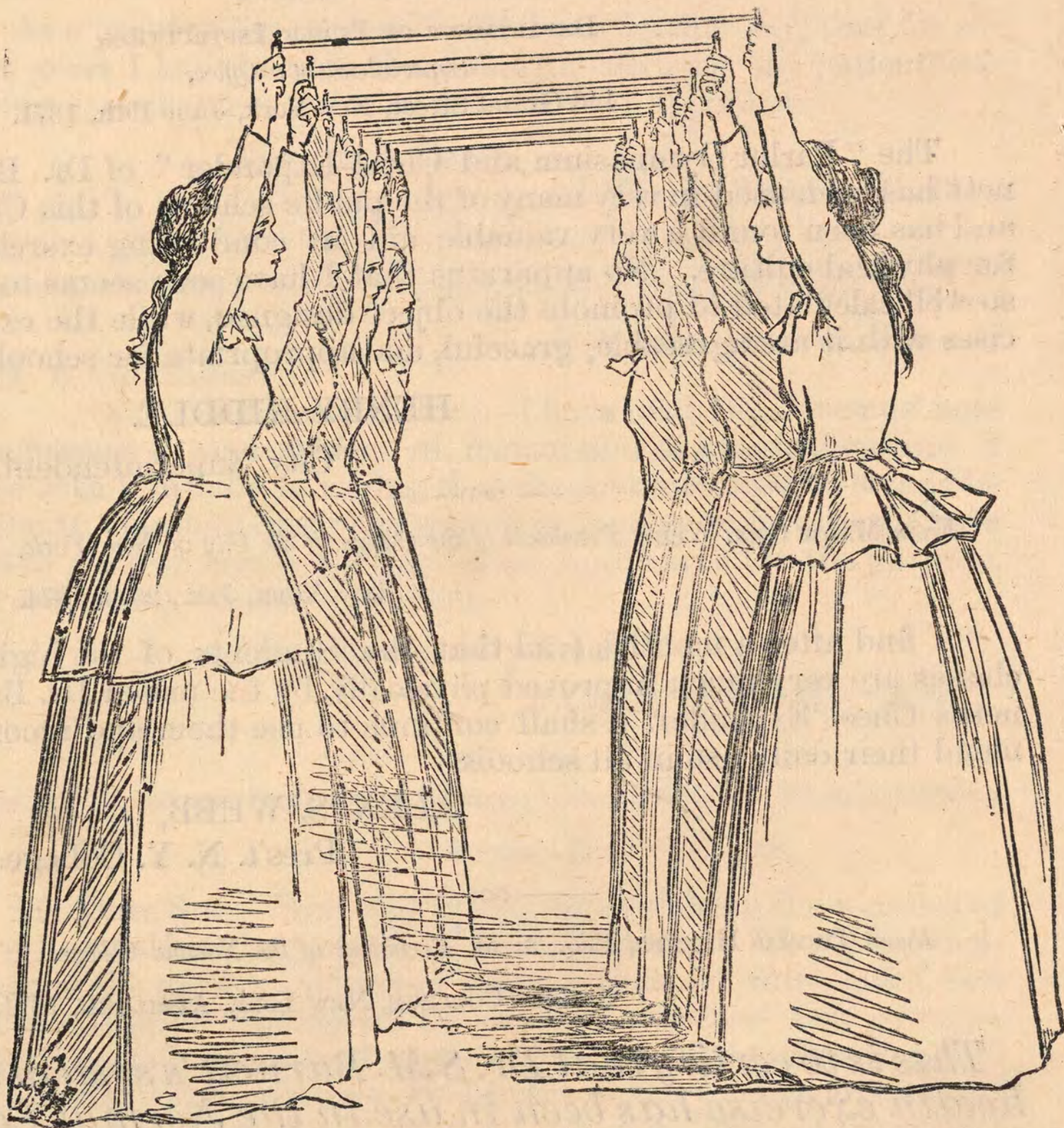
From THOMAS HUNTER, ESQ., A. M. President of the Normal College.

NORMAL COLLEGE, NEW YORK, APRIL 8th, 1874.

This is to certify that Dr. S.M. Barnett's system of health exercise has been in use in the Normal College for some time, and that I consider it admirably adapted for such light gymnastic exercises as can be safely and profitably pursued in Schools. We now realize its benefits, and could not be induced to dispense with its use; I know of nothing equal to it and can cheerfully recommend it to my

fellow teachers, accompanied with music as it should be and with carefully selected and arranged exercises, Dr. Barnett's system will accomplish all the results achieved by Dumb Bells and Indian Clubs, in a much easier and simpler manner.

THOMAS HUNTER, President.



From PROF. R. B. CLARKE,

FITCHBURGH, MASS., August 30th, 1874.

DEAR SIR ; I have to day received your box containing four doz. "Expanders," two doz. of which are No. 2, and two doz. No. 3. I find that No. 3, especially, are better adapted to the strength of pupils of sixteen or seventeen, and will try the muscle of a pretty

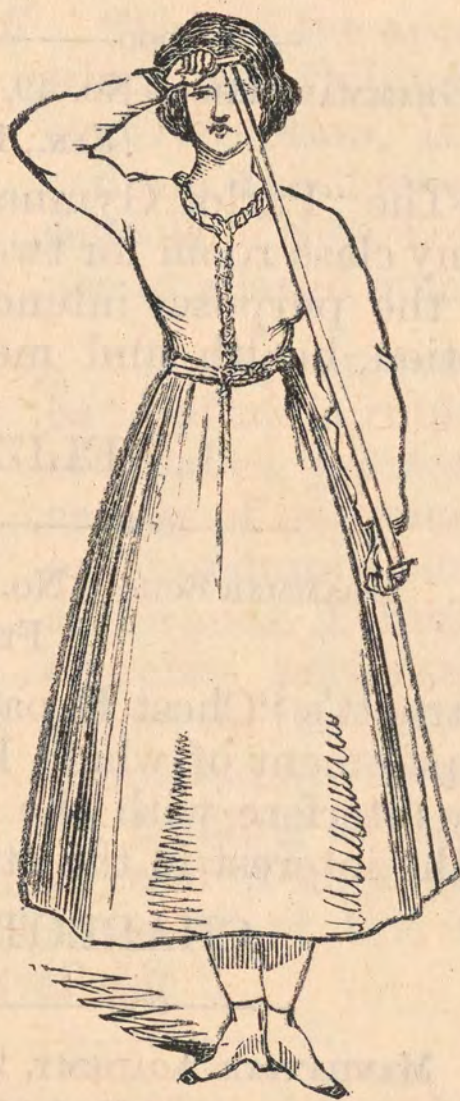
good arm. I am well aware that much depends upon the teacher for the success of calisthenic exercises, as for the other exercises of the school room. I know, in fact, that many who succeed well in other respects fail here. But I also know that, with *something to stay the arms in their movement, the scholar may seem to be exercising for an object and not merely dashing and fisting the air, there will then be a greater interest manifested in the practice.* Exercise for the chest and upper extremities is by far the most successful of any for our scholars, a large proportion of whom are growing up with round shoulders and feeble forms. Your "Expanders" meet this want of our pupils better than anything heretofore presented to the public. They can be used quite conveniently in the school room or elsewhere, while the grace of movement, with an eye to which they seem to have been designed, must always make them a favorite.

Yours very truly,

R. B. CLARKE,

Principal of High School.

—ooo—



NEW HAVEN, MAY 12th, 1873.

Dr. S. M. BARNETT,—Dear Sir, We have used the 'Chest Expander' at the Eaton School for about two years, and can speak of it in terms of unqualified praise—Round shoulders and the careless

lounging position so common in the school room, have been entirely banished by its use. One of the important benefits derived from continued practice in classes with the Chest Expander, is the prompt and soldier like obedience to orders and school signals. I consider it the most satisfactory system of School Calisthenics that has ever been used.

Respectfully, JOSEPH GILE,
Principal of Eaton Grammar School.

—ooo—

GRAMMAR SCHOOL No. 24, FEMALE DEPARTMENT,
NEW YORK CITY, 1868.

Dear Sir;—Your “Chest Expander” has been in use in this school, and I have found that it serves every purpose for which it was intended. I am highly pleased with it, and think it a desirable article for every school and family.

Yours, &c.,

MARGARET A. McCOSKER,
Principal.

—ooo—

GRAMMAR SCHOOL No. 49, FEMALE DEPARTMENT,
JAN., 15th, 1874.

DR. BARNETT,—The “Parlor Gymnasium & Chest Expander,” has been in use in my class room for two years, and I find it admirably adapted to the purposes intended, being conducive, not only to grace of motion, health and mental activity, but also to economy of time.

ELIZABETH W. BROWN.

—ooo—

GRAMMAR SCHOOL No. 8, FEMALE DEPARTMENT,
FEB. 18th, 1874.

I have used Barnett's “Chest Expander” regularly for almost two years in the department of which I have the charge, and find that they in no way interfere with the other exercises, but tend rather to advance the interest in the studies.

CHARLOTTE WHITE, Principal.

—ooo—

MANHATTAN ACADEMY, 213 WEST 32nd STREET,
New York Nov., 3rd, 1873.

I can recommend “Dr. Barnett's system of Health Exercise or Parlor Gymnasium,” which is now in use in the Institution of which I am Director.

A very great benefit in the use of this apparatus over any other, is that in the play ground or recess the scholars are less liable to become over-heated or to injure themselves by rough play or violent exercise.

It presents likewise a means of recreation and healthful amusement, while it has also the advantage of being popular with the scholars.

BRO. BERTRAM.

—ooo—

De La Salle Institute,

I cheerfully endorse the above statement, Dr. Barnett's system being in use in the Institution of which I have charge.

BRO. STEPHEN, Director.

—ooo—

Mr. HUGH CARLISLE, Principal of Grammar School No. 26, in a letter of introduction, recommending the article for use in schools, says;

"This is the apparatus in the use of which we exhibited a class at our recent Reception. It has lately been placed on the 1st of supplies for the schools of New York, and is already in use in a large number of them.

"The apparatus consists of a mere band of india rubber, fixed in a couple of handles, yet it admits of as great a variety of movements as a complete outfit of dumb bells, Indian clubs, rings and wands. I think this was shown by exercises performed with it in our school on the day of the Reception. Scholars have as much right to physical training at the public expense as

they have to mental training, and if an apparatus is to be used, the versatility and inexpensiveness of this one, it seems to me, point it out as the most available."

—ooo—

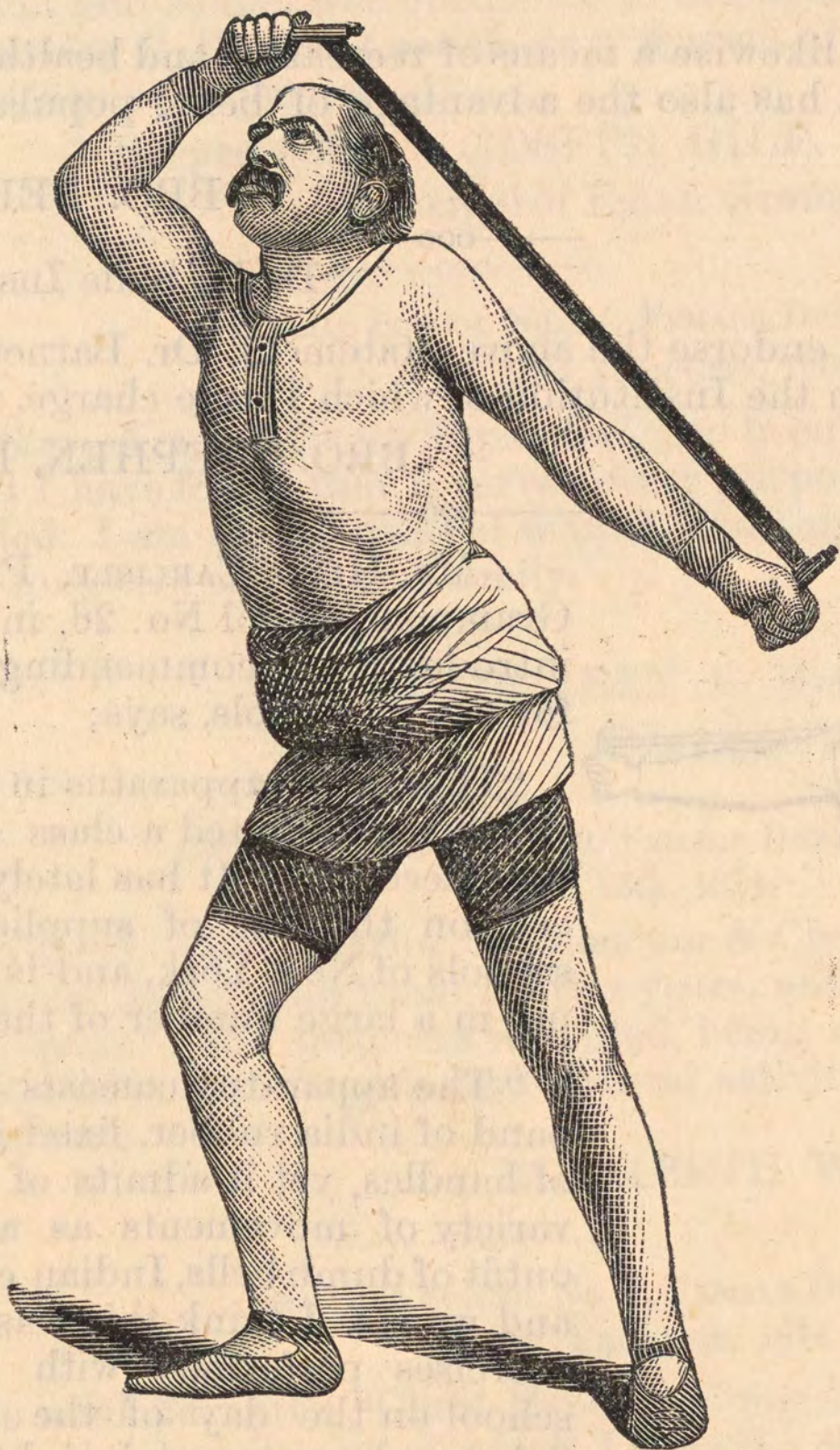
College of the City of New York,

January 18th, 1873.

I have used and am constantly using "Dr. Barnett's Parlor Gymnasium," to which I have become so attached, that I can not



well go a day without it's exercise, I invariably recommend it to weak lunged and narrow chested pupils, especially teachers and clergymen, as a further assistant in promoting voice power.



It is a capital aid to a public speaker, Its use a short time before addressing an audience by the speaker, will diffuse the blood that gathers so heavily about the heart at such a time, and give courage and confidence with the returning circulation even to those most nervously inclined.

It is a great dissipator of ennui at all times in the study or elsewhere.

J. E. FROBISHER,

Prof. of Elocution, Author of Voice and Action.

The following Testimonial are from some of the most efficient and progressive Principals of our Public Schools.

NEW YORK, MAY, 1871.

DR. BARNETT—

Your "Parlor Gymnasium and Chest Expander" is in use in our several departments. We esteem it as the most simple and comprehensive article of the kind ever invented, combining a variety of exercises. We consider it a valuable aid in physical culture, and believe its merits will be fully appreciated wherever used:

—ooo—

Elizabeth T. Vance,—Principal of Primary Department Grammar School No. 57.

J. S. Warner,—Principal Male Department Grammar School No. 57.

Mary A. Freeman,—Principal Primary Department Grammar School No. 39.

M. A. Washburne,—Principal Female Department Grammar School No. 39.

Frances E. A. Gutch,—Principal Female Department Grammar School No. 49.

Sarah J. J. McCaffery,—Principal Primary School No. 16.

Caroline F. Whiting,—Principal Female Department Grammar School No. 14.

Catharine A. Thompson,—Principal Primary Department Colored School No. 3.

T. Dwight Martin,—Principal Male Department Grammar School No. 32.

H. Williamson,—Principal Male Department Grammar School No. 53.

Lafayette Olney,—Principal Male Department Grammar School No. 14.

J. T. Boyle,—Principal Male Department Grammar School No. 42.

P. L. Loss,—Principal Primary Department Grammar School No. 42.

Charles L. Reason,—Principal Grammar Department Colored School No. 3.

Alonzo Hopper,—Principal Male Department Grammar School No. 11.

Lucretia E. Maguire,—Principal Primary Department Grammar School No. 56.

Amanda M. House,—Principal Primary School No. 27.

Wm. M. Baker,—Principal Male Department Grammar School No. 55.

Abby N. Beale,—Principal Primary Department Grammar School No. 11.

S. D. Allison,—Principal Male Department Grammar School No. 7.

Hannah M. Gedney,—Principal Primary Department Grammar School No. 34.

Katherine W. White,—Principal Female Department Grammar School No. 29.

Carrie V. Franklin,—Principal Primary Department Grammar School No. 12.

Mary J. O'Leary,—Principal Female Department Grammar School No. 1.

Mary J. Gallagher,—Principal Female Department Grammar School No. 23.

M. Louisa Scott,—Principal Senioir Department Grammar School No. 41

Sarah E. Buckbee,—Principal Primary Department Grammar School No. 19.

H. Louise Clark,—Principal Primary School No. 26.

John J. Delaney,—Principal Male Depar't Grammar School No. 12.

Melinda N. Clark,—Principal Female Department Grammar School No. 36.

Henrietta Fisk,—Principal Primary School No. 39.

Sarah A. Jarvis,—Principal Primary Department Grammar School No. 15.

Maria Jasper,—Principal Primary Depar't. Grammar School No. 58:

Carrie E. Carll,—Principal Primary School No. 1.

Clara A. Root,—Principal Primary Department Grammar School No. 7.

Sarah A. Bunker,—Principal Female Department Grammar School No. 7.

Emily A. White,—Principal Primary Department Grammar School No. 4.

Annie McVey,—Principal Primary School No. 3.

Sara E. Raywood,—Principal Primary School No. 36.

Matilda Mosher,—Principal Female Department Grammar School No. 2.

Francis Jos. Haggerty,—Principal Male Department Grammar School No. 2.

S. E. Woodward,—Principal Female Department Grammar School No. 47.

Benj D. L. Southerland —Principal Male Department Grammar School No. 3.

Margaret Donegan,—Principal Primary School No. 14.

H. M. Sanborn,—Principal Male Department Grammar School No. 10.

W. F. Hudson,—Principal Male Department Grammar School No. 18.

C. L. Dugan,—Principal Primary Department Grammar School No. 8.

Chas. W. Lord,—Principal Male Department Grammar School No. 8.

Sarah Smith,—Principal Primary School No. 6.

Mary McCloskey,—Principal Primary Department Grammar School No. 17.

Elizabeth C. Jones,—Principal Primary School No. 22.

Caroline Hopkins,—Principal Female Department Grammar School No. 42

H. C. Martin,—Principal Male Department Grammar School No. 34

Harriet N. Goldey,—Principal Female Department Grammar School No. 34.

AND NUMEROUS OTHERS.

They are introduced into the following Private Academies and Institutions;

ADELPHI ACADEMY,

DE LA SALLE INSTITUTE.

ST. LAWRENCE ACADEMY.

SISTERS OF ST. MARY'S ACAD'Y

MRS. BENEDICT'S

MANHATTAN ACADEMY.

FRIENDS' SEMINARY.

HARLEM COLLEGIATE INST.

FRIE DEUTCHE SCHULE.

MRS. BLEEKER'S.

MRS. JONSON & MISS JONES'
MISS COMSTOCK'S
ST. BRIDGET'S

MRS. WILLIAMESE'S
MME. MEARES'
ST. PETER'S

ST. GABRIEL'S

ST. PAUL'S PARISH SCHOOL, Under the charge of the Rev. Dr. Dix
AND OTHERS.

—o—



From the New York Daily Register of March 12th, 1873.

PHYSICAL TRAINING.

There is no class of men so neglectful of physical exercise and training as lawyers. Confined, as they are, to their offices, sitting for hours at their desks, writing wearily, reading greedily, and only now and then giving utterance to some expression forced from them by their appreciation of their authors' reasoning or their condemnation of his duplicity or his lack of knowledge of logic in his premise and conclusion.

The great difficulty we apprehend, is the fact that lawyers, like other students, confound mental excitement with physical health. Time with them is so valuable, that they spare but little for the pleasures of life, and by force of habit, and often of necessity, accept intellectual exhilarations as the highest kind of pleasure, and consider their ability to realize this sort of excitement as the best proof of their good physical condition. After awhile the overworked brain demands rest, but it finds it only by the prostration of



the physical system, paralysis, and ultimate death. The reciprocal dependence of the body and the mind upon each other is theoretically admitted by all; but, practically, the mind is considered to be independent of the physical man. Lawyers, therefore, are not a healthy class. Such of them as attend on the Courts and plead before juries are exercised, it is true, but even these are not judiciously trained physically. Exercise, to be beneficial, must be

regular and continuous. He who exhausts his physical strength to day by a prolonged address to Court or Jury, and is idle to-morrow and the next three or four days, is sure to sink into a state of physical prostration which, to an active brain, is virtual death.

We think that it is criminal in a man, be he a practitioner at the Bar or a Judge on the Bench, to live in the perpetual violation of the laws of health. He may say that he has no time to devote to physical exercise. He might as well say that he has no time to eat or sleep; for, although physical culture is not as essential to life as these, yet it is essential to good health, and what is life without good health?—a burden, a failure.

We have been led to these thoughts by reading a most interesting and instructive work by Dr. Barnett, entitled "Parlor Gymnasium," for the use of an apparatus bearing the same title. We cordially recommend this book to our readers, and believe that its study and use of the apparatus, will amply repay all, and the practice of its rules for physical culture will do great good.



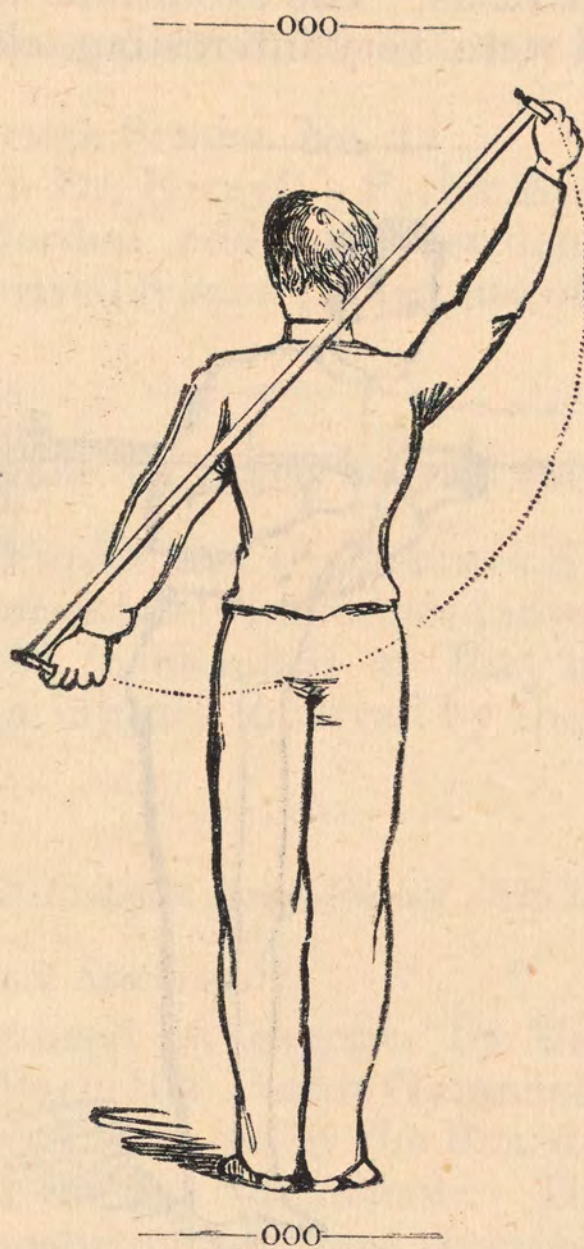
From the N. Y. Sun, April 22nd, 1871.

EXHIBITION OF GRAMMAR SCHOOL, No. 26. * * The Gymnastic exercises with "Barnett's Parlor Apparatus" was the most attractive feature in the exhibition.

From the N. Y. Evening Mail, April 28.

REPETITION OF THE EXHIBITION IN GRAMMAR SCHOOL No. 26. * *
 "Barnett's Parlor Gymnasium and Chest Expander." * *

The apparatus is very simple, consisting of a band of rubber, &c. &c. * * The exercises were performed by a class of about fifty boys, and consisted in placing the band in various positions and stretching it in time with music. In this manner the muscles of the whole upper portion of the body are brought into play and naturally developed. The system has been introduced into many of the public Schools and a large number of private schools are also using it.



From the N. Y. Herald, April 29.

REPETITION OF THE RECEPTION EXERCISES IN GRAMMAR SCHOOL 26.
 * * But the exhibition in gymnastics by a class of sixty boys with Dr. Barnett's Parlor Apparatus was perhaps the most attractive feature of the exhibition. Such perfection of drill as exhibited is seldom seen in a public school, and it is pleasing to learn that physical culture is a portion of the course of training in this department.

From the Globe, April 29.

RECEPTION IN GRAMMAR SCHOOL No 26. * * The majority of the audience were teachers who had assembled to witness a series of gymnastic exercises with an apparatus of very simple construction. We were highly pleased with the novelty as well as efficiency of the apparatus, and the precision of the boys in their various evolutions.

—ooo—

From the Evening Post, April 29.

RECEPTION OF GRAMMAR SCHOOL 29. * * Calisthenic exercises with a new apparatus. The evolutions were performed by about eighty boys and were very interesting, eliciting the approval of the spectators.

—ooo—



—ooo—

From the N. Y. Herald, June 22.

SEMI-ANNUAL DISPLAY BY THE FEMALE DEPARTMENT OF GRAMMAR SCHOOL No. 29. * * An interesting feature of the display was the exercises in calisthenics, in which the children in sections went through the various parts in response to orders given on the piano.

From the N. Y. School Journal, July 1.

RECEPTION OF GRAMMAR SCHOOL No. 41.—SENIOR DEPARTMENT. *

* A class of one hundred girls gave a very entertaining performance with Dr. Barnett's Chest Expanders. The handles of the expanders were ornamented with ribbon's of various colors, which blended in the calisthenic movements and presented at times the semblance of a moving flower garden. The girls performed a series of waltzes and quadrilles, illustrating the versatility of exercise of which the apparatus is capable. The rubber bands when crossed formed a bower under which each girl turned in waltz movement.

—ooo—

From the N. Y. Herald, July 4.

EXERCISES IN GRAMMAR SCHOOL No. 12. * * The calisthenic exercises with Dr. Barnett's Parlor Apparatus were particularly fine, and afforded additional evidence of the healthful advantages to be derived from a proper use of this simple apparatus

—ooo—

From the N Y School Journal July 22.

DISTRIBUTION OF CERTIFICATES AT GRAMMAR SCHOOL No. 4. * * The calisthenic exercises lately introduced into the Schools cannot be too highly praised, in as much as they help to remove, in a measure at least, the injuries incurred by the close application of the school room.

—ooo—

From the Lockport Daily Journal, July 27, 1871.

THE STATE TEACHERS' ASSOCIATION. * * * * *

The President announced an exercise by Master Heinmuller, of New York, of Dr. Barnett's Parlor Gymnastic Chest Expander, which has recently been adopted by the Board of Education in the city of New York for the use of schools. The exercise was very fine, especially the posturing, and was received with evident satisfaction by the many teachers present.

—ooo—

From the Syracuse Daily Standard, August 2, 1871.

NEW YORK STATE TEACHERS' CONVENTION,— * * * * *

The evening's exercises at the hall commenced with an exhibition by Master Heinmuller, a pupil of one of the public schools of New

York, with a novel apparatus called Dr. Barnett's Chest Expander. The young lad went through the movements finely, and met with the plaudits of those present.

—ooo—

From the Globe of December 1st, 1871;

**Reception of the Girls' Department in 36th Street School,—Calisthenics,
Elocution, Vocal and Instrumental Music.**

* * * * *

The prime feature of the afternoon was the calisthenic exercises by a portion of the pupils. Graceful, healthful, cheerful, and agreeable are these exercises, now introduced in all our public schools on Dr. Barnett's system. If you would see girls growing up with good figures, go to this school. There you will see girls with an elastic step, shoulders thrown back, graceful, sprightly attitudes, physical drill, smiling faces, readiness to act in concert, obedience to rule, self-reliance, and mutual dependence, all in happy combination

—ooo—

From the N. Y. School Journal, Dec. 2nd, 1871.

* * * * *

After this came one of the most interesting incidents of the afternoon. At the sound of the piano the Calisthenic class, numbering about a hundred, came marching into the room, and to the varied strains of the piano went through their interesting exercises. There were front, back, left and right side movements; movements allegretto, adagio, andante, etc. Sometimes the pupils exercised singly; at others in couples; and again in groups of four. Altogether Dr. Barnett's system of calisthenic exercises were a feature of unusual interest, and attracted considerable attention and elicited much applause.

—ooo—

From the New Haven Register, Dec. 23rd, 1871.

Closing Exercises and Calisthenics at the Eaton School, Friday,

* * * * *

There was one thing in the programme which is new to the public schools of New Haven. The scholars of Eaton School are indebted to their principal, Mr. Giles, for the introduction of "Barnett's Parlor Gymnasium and Chest Expander," an article composed of a tough ribbon of rubber, four feet long, more or less to which handles are fitted at either end. These handles are grasped by the pupils, the band stretched, and various attitudes assumed, the whole making an admirable system of light calisthenics, which ought to be more in use. The reception was given

more for the purpose of exhibiting this article than for anything else, and the parents and guests present were greatly pleased with the evolutions of the scholars while using the expander.

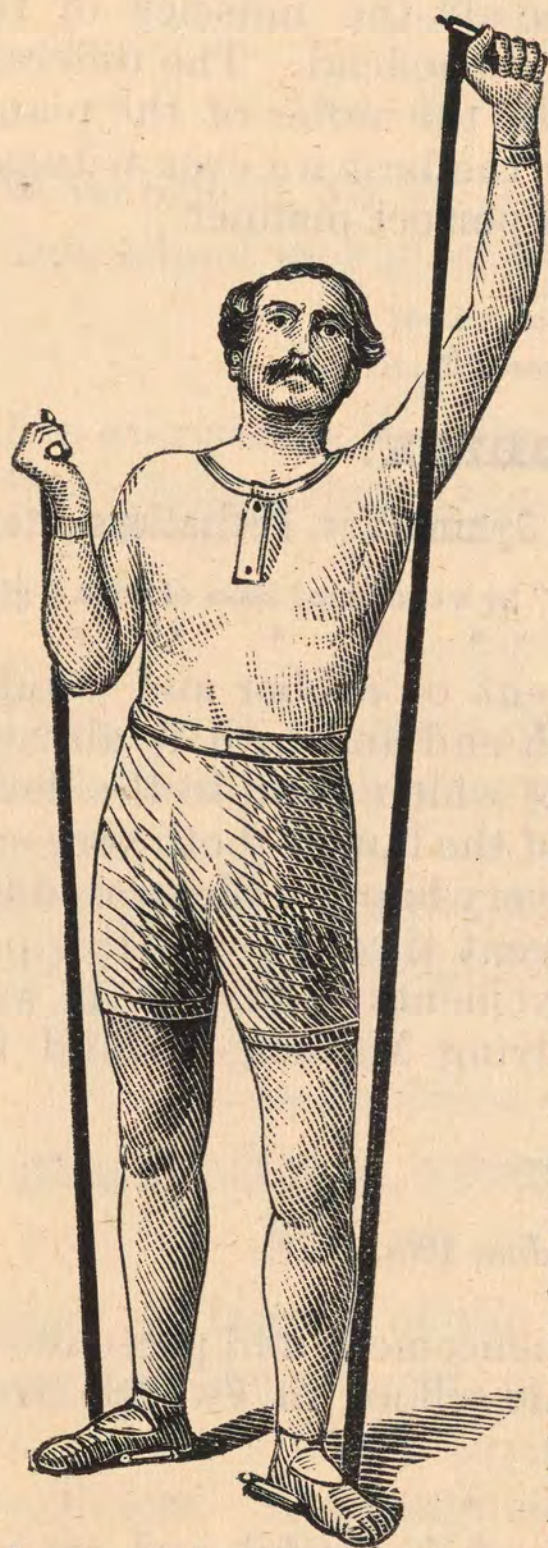
—ooo—

From the N. Y. School Journal, Nov. 23rd, 1872.

GRAMMAR SCHOOL No. 13.—On last Thursday, in the Female Department of this school, the semi-annual certificates were distributed by the Board of Trustees.

8, Calisthenic Exercise,—With use of Dr. S. M. Barnett's Chest Expanders.

* * * * *



The performance by the calisthenic class was extremely interesting, and consisted of various calisthenic exercises. The pupils of this school are entitled to more than ordinary praise for such perfection in physical exercise.

—o—

From the New Haven Morning Journal & Courier, of Dec. 11th, 1872.

An Hour in a School House.

To those of our citizens who, like the writer, have given more attention to business and public affairs than the details of our educational system, a practical inspection of the working of the present plan for moulding children into little men and women cannot fail to prove at once interesting and profitable. A party of ladies and gentlemen visited the Eaton school one morning last week. * * The children take real pleasure in the work appointed for them, in which recreation is judiciously combined with instruction. An attractive and health giving feature of the morning exercises is "calisthenics" on Dr. Barnett's system, a series of motions with the arms, regulated by the music of the piano. Each pupil holds in the hand

short sticks secured by a rubber band about twenty inches long, and a very pretty effect is produced by the uniform, and rapid performance of the different movements.

From the Jersey City Evening Journal, May 15th, 1872.

Calisthenics at Public School No. 1.

A very pleasing and interesting exhibition of gymnastics or calisthenics take place daily in the female department of Public School No. 1, in York street, and this afternoon we enjoyed the privilege of witnessing these entertaining exercises. The calisthenic class then went through their exercises, which is according to the system of Dr. Barnett, the movements being made in the same manner as formerly in vogue, but by the aid of a rubber band with wooden handles, considerable force being required to stretch the band, thus bringing into use all the muscles of the arms, and rendering the exercise more beneficial. The different movements are made in accordance with the notes of the piano. This system of calisthenics is decidedly the best we ever witnessed, and were executed by the class in a perfect manner.

—ooo—

From the Brooklyn Eagle, June 20th, 1872.

ADELPHI ACADEMY.

Reception at the Academy of Music—Music, Gymnastics, Recitations, Etc.

Tenth—"Exercise with Barnett's Chest Expanders." by a combined class of boys & girls

* * * * *

The "Expander" is a simple instrument of rubber and wood, a strip of elastic with a handle upon each end and with it all sorts of motions can be made, any and all of which tend to the development of muscle and the expansion of the lungs—both very sensible things to do, in moderation, and very happily illustrated last night by the pretty youngsters who went through with this part of the performance. Some of the movements indulged in were fancifully named the "Salaam," the "Flying Messenger," and the "Gymnast."

—ooo—

From the New York Herald, June 19th, 1873,

GRAMMAR SCHOOL No. 47.—The commencement and presentation of Gerard medals to the pupils of this school, in Twelfth street, took place on Thursday, the 18th, inst.

* * * * *

The exercises concluded by a series of beautiful and graceful calisthenics with Dr. Barnett's chest expander, evincing a perfection of physical drill, and showing in the ease and strength of movement the advantages of this system of physical culture.

From the New York School Journal, June 19th, 1873.

GRAMMAR SCHOOL No. 36, FEMALE DEPARTMENT.—The distribution of the semi-annual certificates took place in this department last Tuesday, with the following programme: * * *

10. Calisthenics—Dr. Barnett's Chest Expanders.

* * * * *

The exercises in calisthenics, or chest expanders now in vogue in our schools, add to the attractiveness of a reception as well as being healthful in daily use. The "Archery Exercise" and "Forming the Bower," particularly elicited the admiration of the audience.

—ooo—

From the School Journal, June 21st, 1873.

WARD SCHOOL No. 50.—A reception of the Primary Department of this school took place on Friday the 21st inst.

19—Exercises with Chest Expanders

* * * * *

The exercises with "Barnett's Chest Expanders"—only in use in this school a short time—were unique and satisfactory.

—ooo—

New York, Herald, June 28th, 1873.

The Closing Exercises of the Primary Department of Grammar School No. 28, took place yesterday. * * *

* * * * *

But the feature of the entertainment was the Calisthenic exercises, to music by the children.

—ooo—

Jersey City Evening Journal, Friday, April 11th, 1873.

RE-OPENING OF No. 2 SCHOOL,—Interesting Exercises by the Pupils.

* * * * *

The next feature of the exercises is deserving of all praise. The whole department performed a series of calisthenics with "Dr. Barnett's Chest Expander," with wonderful precision and promptness. A distinguishing feature was the efficiency of the drill of the children. Every movement was governed by the sound of the piano.

Local Reporter, January 28th, 1874.

The entertainment given by the Harlem Collegiate Institute last Friday evening, for the benefit of the poor of the ward, was a successful affair.

* * * * *

Another pleasing part of the entertainment was the calisthenic exercises with Dr. Barnett's parlor apparatus, or "chest expander," which is daily used by the young ladies in this school. It is a very simple article, consisting merely of a strip of heavy rubber between two wooden handles, but very effective for its purpose, and the movements executed with it on this occasion were highly graceful.

—ooo—

Every family and school should have them.

Every business and professional man should have them.

Every teacher, clerk and seamstress should have them.

Every person whose occupations are sedentary should have them.

—ooo—

It is perfect in its adaptability to the use of all persons of both sexes, and presents a variety of healthful exercises unattainable by the use of any other apparatus.

It cannot be used without inducing an equalization of the blood circulation, and imparting an increase of power to the nervous and muscular system.

For the developement of the organs and muscles of the chest it is unsurpassed, and counteracts the evils resulting from the constrained position at the sewing machine, the desk or from any occupation of a Sedentary character, while for Spinal Curvatures, Round Shoulders, and other bodily distortions it is invaluable in its effects.

—ooo—

Prices of the Apparatus;

No. 2,.....	\$1.25.
No. 3,.....	1.50.
No. 4,.....	1.75.
No. 5,.....	2.00.

Manual of instruction for the use of the apparatus, beautifully illustrated and bound, 75 cts.

The apparatus and book will be sent by mail on receipt of price.

For Sale by Dr. S. M. BARNETT.

599 BROADWAY, N. Y.

—ooo—

WANTED—First-class Agents in every County in the United States, where none are already employed, to whom liberal inducements will be given.

SPECIAL ARRANGEMENTS will be made with School Officers, Gymnasiums, and Clubs, desiring a supply of the apparatus.

Address, Dr. S. M. BARNETT,

599 Broadway. N. Y.

—ooo—

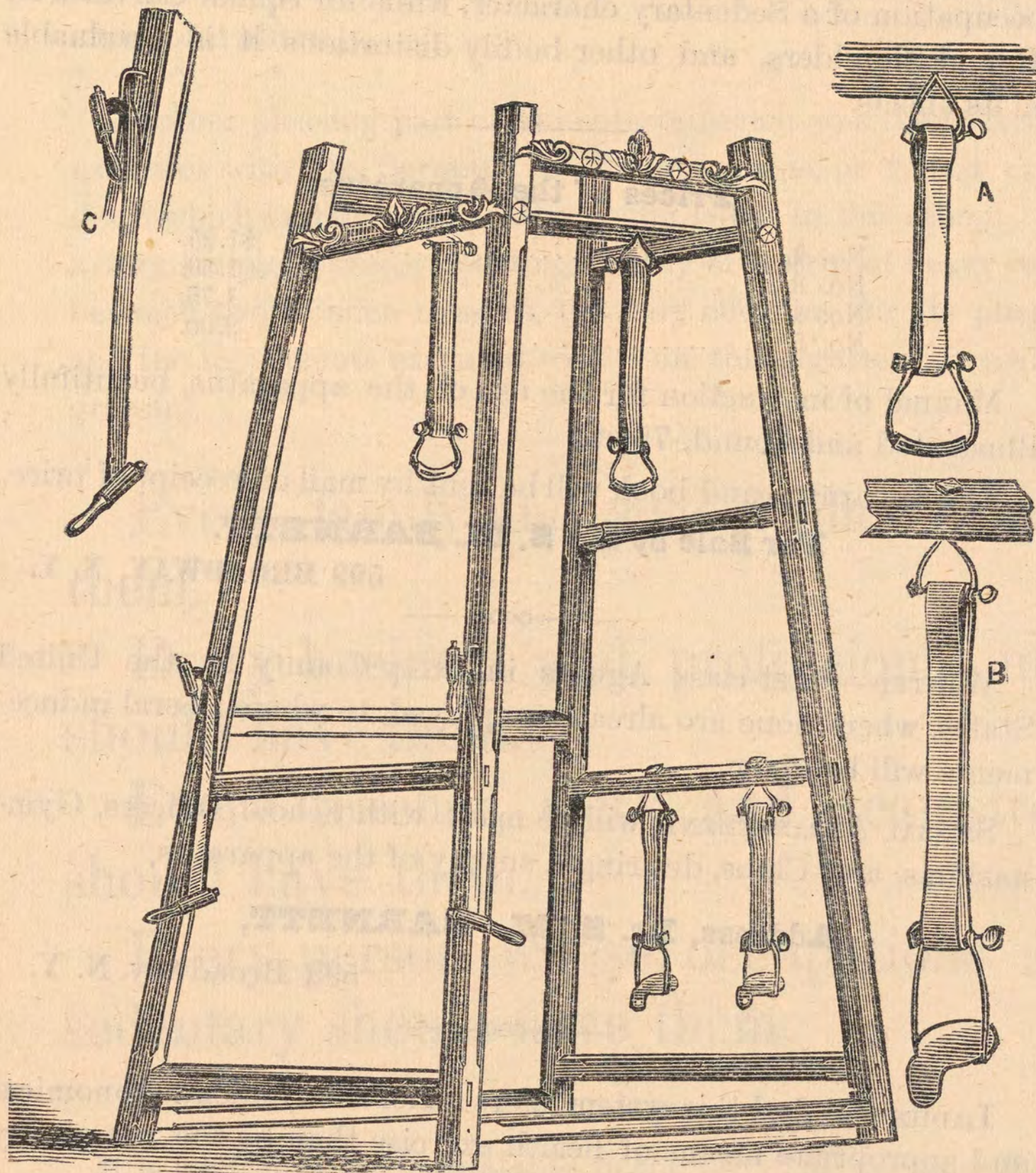
LADIES will find this system offers a more convenient, economical and appropriate means of health exercise than by the use of any other apparatus or machine.

YOUNG MEN desiring to obtain combined flexibility and strength of muscle; so as to fit themselves for the trapeze or boating, would do well to use this apparatus.

PROFESSIONAL AND BUSINESS MEN whose mental and nervous systems have been overstrained, will obtain relaxation and relief by the use of this apparatus.

THE BARNETT GYMNASIUM.**Price, \$50.**

These Machines are of Black Walnut; with the metal work handsomely plated.



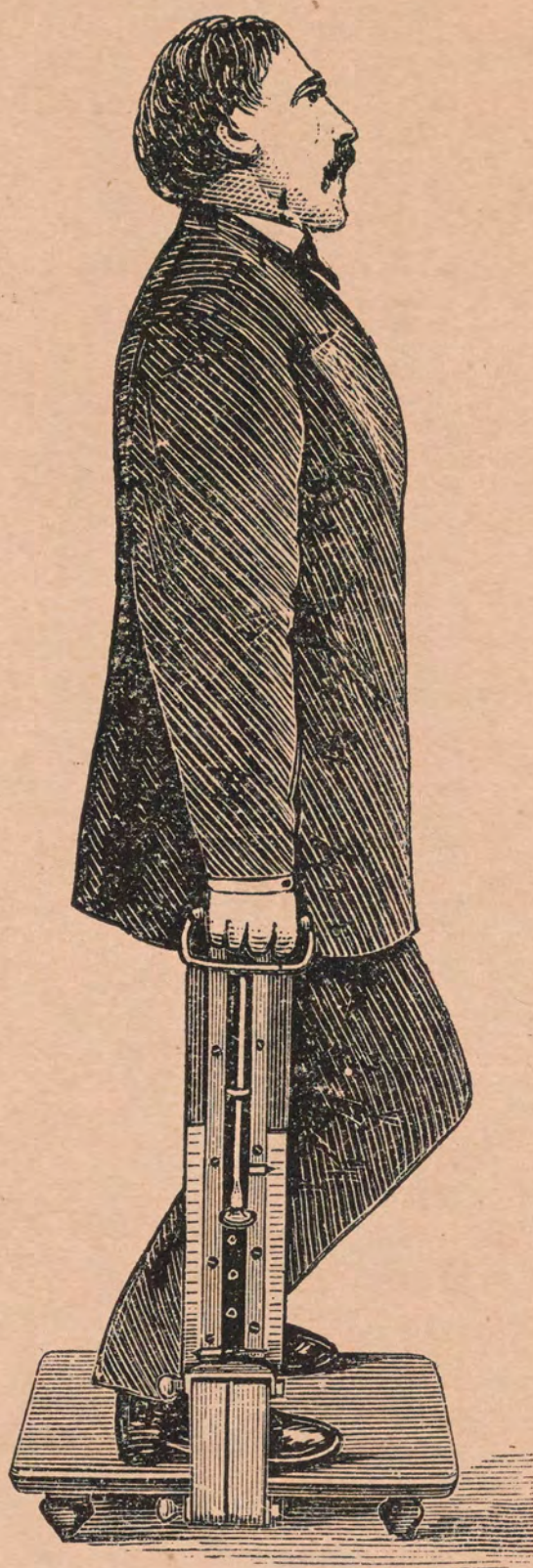
EITHER OF THESE MACHINES CAN BE USED IN A

PARLOR, HALL, BEDROOM or BUSINESS OFFICE.

And though more costly and elaborate in finish and suitable to the tastes and inclinations of some persons, are only in these respects different from the simple apparatus illustrated in the preceding pages, which possesses all the advantages to be obtained from the use of any appliances whatsoever, as evidenced by the thousands who have them in daily use.

THE BARNETT HEALTH LIFT,

Price, \$25.



— 000 —

These machines unlike other Lifting Machines are portable, the platforms being made of Black Walnut, and although less costly are fully as effective and valuable as other lifting machines which cost from \$100 to \$300 each.

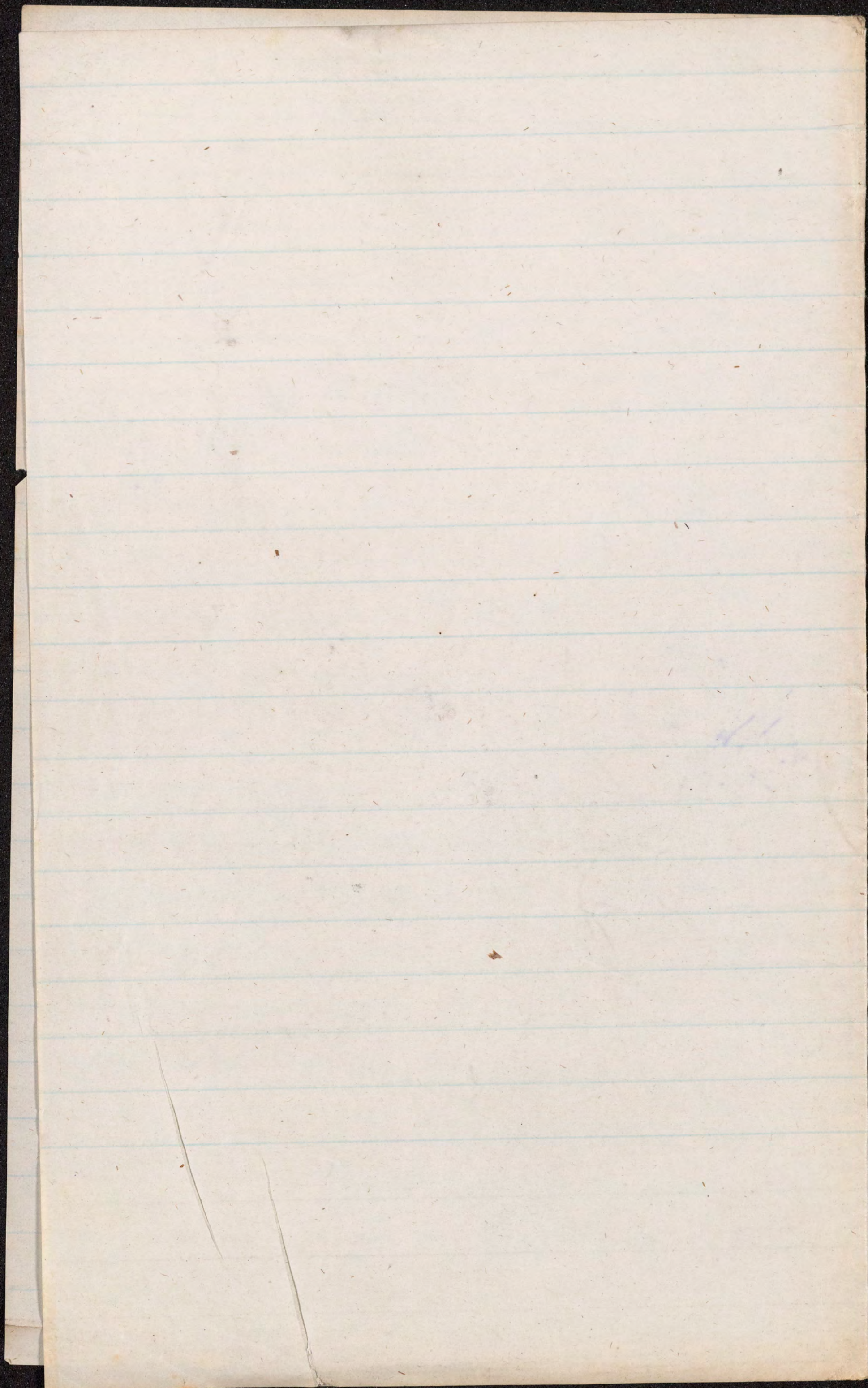
Address, Dr. S. M. Barnett,

599 Broadway, N. Y.

This pamphlet explains a convenient, effective and economical method of fostering and confirming health and strength, by a system of exercise which does not require one to leave home or occupation, and consumes comparatively no time in its use.

Are you quite sure that you can afford to despise this simple means of exercise, whereby your strength and health can be cultured at no expense of either money or time, and involving also no disarrangement of your ordinary business avocations?

 *See numerous testimonials from the highest medical, educational and other authorities, and illustrations of exercises on inside pages.*



720

3.60

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1200.00

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(Parker) (after p. 118 of Harding's Notes
or Campbell)

Effects of Exercise.

1. On Respiration.

Dr E. Smith has ^{putting at unity the amount of} shown that ^{normal breathing} while

lying down, ~~a man~~ sitting up, marches,

makes it 1.18 ($1\frac{1}{5}$ nearly)

standing, 1.33 — ($1\frac{1}{3}$)

walks 3 miles an hour — 3.22 ($3\frac{1}{4}$)

walks & carrying 118 lb — 4.75

" 4 m. per hour 5

" 6 " " " 7

Riding at a trot — 4.05

Treadmill — 5.5

Amount of Carbonic acid exhaled

is ^{increased} proportionately. Potentioform — taken in more Oxygen
at night

Precept — In exercise the lungs

must be free, — & the air pure; &



Carbonaceous food must be
afforded ^{sufficiently}

^{in moderate quantity}
Rat is appropriate; the

trainers have supposed the contrary.

Sports when drunk in health retard
and directly lower muscular strength;
exhalation of CO_2 , ^{thus especially}
are impaired with exercise, as well
as without.

Effects On Heart & Vessels:

Action hurried — by impulse
of blood by "Sympathy"

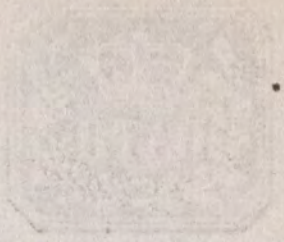
^{hastened by}
usually 10 — 30 beats per minute;

^{up to}
120 — 140 — stop — sometimes

160 — 170: ^{thus} won't do long.

[Cardiac Exhaustion already discussed
Dr Maclean of Brit Army confirms]

Dr Maclean of Brit Army confirms



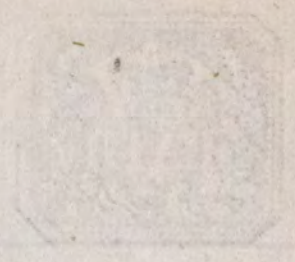
On the Skin. —

Circulation Vascular of height
perspiration increased —
will bear exposure to air
Coolness during exertion —
but especially needs protection from
chilling afterward —

On the Muscles. —

Waste — renovation —
Gain or loss, accord] to amount
Conditions of effort. (Weston) —
Lactic acid (Acrysin) in muscle
Source of soreness of fatigue? — Myalgia of
human. — [End of 14th Lecture, 1872.]

~~End of~~



~~John H. H. H.~~
/

Effects of muscular exercise

On Digestion:

If well-timed & in due amount, — appetite improved &

Digestion favored

But not just before nor soon after a meal

On Nervous system:

favorable, equalizing —
a tranquilizing —

Over-muscular? athlete stupid?

maybe only want of culture —

A Windsor a nervous man;
he faint before his first lecture.

On Generative organs —

fatigue is anaphrodis. —

Musc. culture hard & so, I think.

2600

805000
400000
200000

2600 725000
360000
180

~~(The answer)~~

On change
Metam. tissue

Secretions
Elimination

Fick Whilicous

to a. 22. 10. 10.
10. 10. 10.
100 m. in 22 hrs.
100 m. in 22 hrs.
100 m. in 22 hrs.

Exercise increases both
Perspiration more than urinary excretion.

Demand for Water follows.

Greatest error in Army ^{armies}
~~to formerly~~ to deny water to soldiers
thorses on march. They need a

great deal of water; ^{and there is} no great

thirst after dry battle than
thirst (My dog always wants to drink
when he has been barking for a few minutes)

Let cold water be drunk,
while undergoing continued exertion of
slow ^{moderately} when exhausted; but

as often under ^{exercise} ~~exertion~~ as demanded
by nature. A great draught of
very cold water, when fatigued & relaxed by
heat, may be dangerous & depressing.

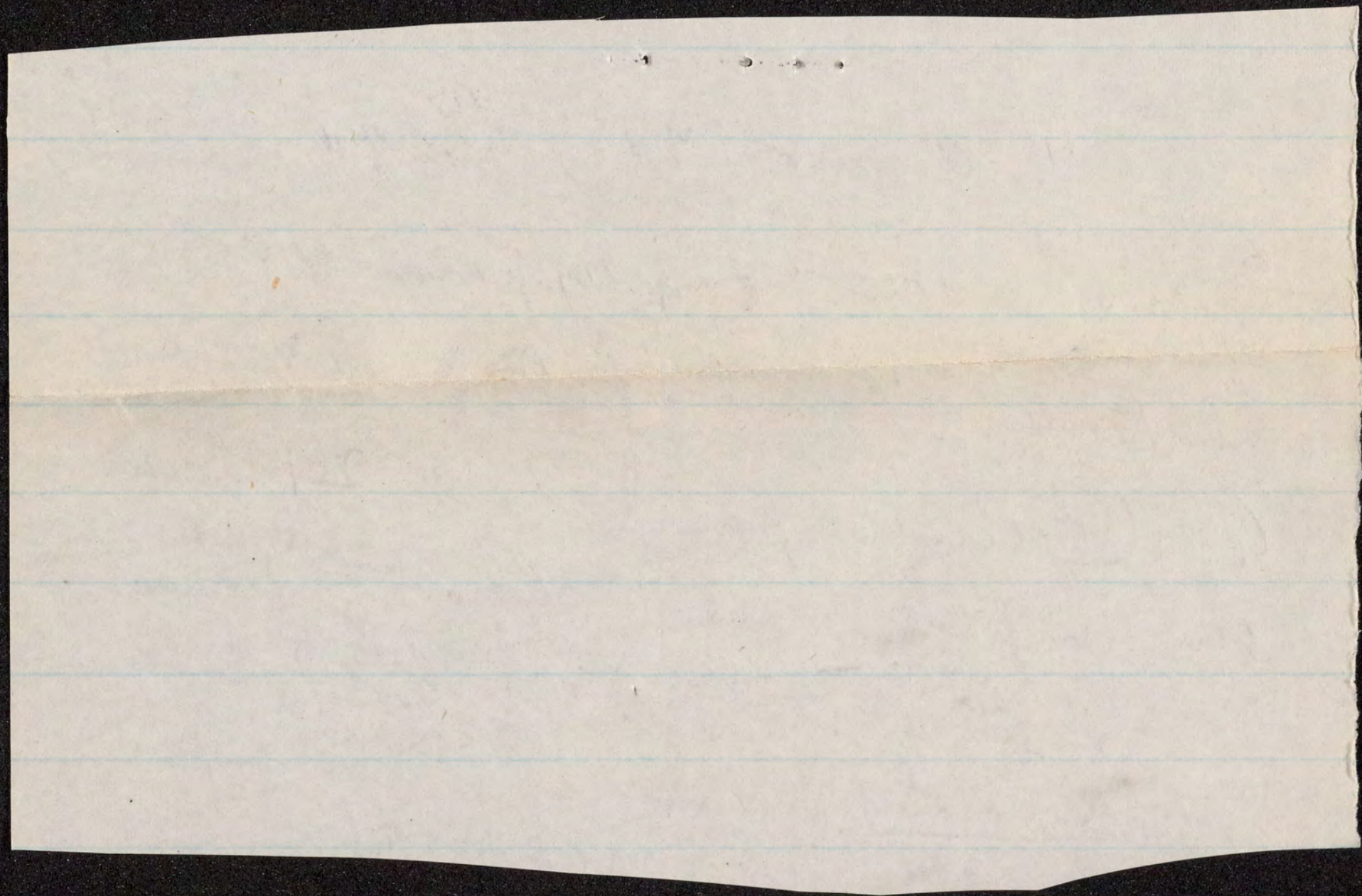
Windsup's maximum lift is over 2000 lbs.

Weston, & one other before him, have
walked 100 miles within ^{afterwards, 400 miles in 5 days.} 24 hours; He
has just (^{5 mo} May, 1874) attempted to walk
500 miles within 6 days. I doubted be-
-forehand his ability to accomplish this.

— 5/18/74 — The news has arrived that
he accomplished 430 miles (shall we say
only?) within the allotted time. This is prob-
-ably quite unprecedented. Exceeded later.

Capt. Webb's swim about as extraordinary.

In August 1875, Capt. Webb
Swam (without any apparatus) across
the British Channel, ~~from~~ Dover
to Calais, in about 21 hours,
an unprecedented feat ^{20 miles shortest} across.
Capt. Boyton's exploit, ^{the same year} crossing the Channel
with no apparatus, was remarkable, but quite inferior
to this of Capt. Webb.



or muscular effort.

some day 4/7



Explain his apparatus for it in

① 300 tons lifted $\frac{1}{2}$ an acre

↓ Days work for a strong adult.

400 tons a hard days work,

7
sum of labor

As maxima — (De Chaumont)

(2) ~~Mr~~ Parkers mentions a workman in
a copper rolling mill, whose ^{daily} labor a-
mounts ~~to~~ sometimes to 723 tons 1 fr
raised in 12 hours, | ~~Windship - Weston -~~

In India, some coolies will run
with a weight on an ascent 10 miles a day —
= 500 tons 1 foot —

Prolonged continuity greatly increases the
difficulty of all muscular efforts; as, e.g.,
in walking a thousand miles in 1000 hours.

MUSTANGS AT SUFFOLK PARK.—On Monday next, at Suffolk Park, in this city, John W. Francis, of Visalia, California, will ride fifteen mustangs in a race against time. The distance to be ridden is sixty-four miles and the time three hours. The race will begin at 3:30 o'clock P.M. Of these feats against time, the most recent given was at Fleetwood Park, near New York, on Thursday, May 18, which was, however, lost, George Parker being the horseman. The terms of this race were 305 miles to be run in fifteen hours and not over thirty horses to be used, one man to ride the entire distance and the horses to be unselected stock of California nativity. On the 226th mile Parker staggered into the Judges' stand exhausted and almost totally blind and the race was declared lost; \$15,000 was bet on the horses against \$25,000 on time. On Thursday last Parker reattempted the feat, but failed on the 216th mile, owing to blindness.

June 1875

answer—high, defiant answer—
made on a historic field—Cambronne's thrilling monosyllable, which, freely translated, meant "The Mulligan Guard dies but never surrenders."

There was an earlier Mulligan. Not, however, a bolder, though he too was sublime in a charge, and met death facing the fearful odds of San Francisco's whole Police Department. He may have been the Mulligan photomartyr. His Christian name—remembered now as the only Christian thing about him—was William. They called him "Billy." With the same feeling of friendship towards his fellow men that the present Mulligan had and expressed for his fellowman Blaine, Billy locked himself into his room on one of the most frequented streets of San Francisco

8 palanquin bearers in Bengal
carried a heavy officer & a palan-
quin 25 miles $\equiv$ 600 tons lifted
a foot by each.

2 other vendors carried each
70 lb 25 miles; $\equiv$ 648 tons
lifted a foot.

Turkish porters are famous
for weights carrying; 500 to 800 lb
at a time — though not very far
at once. ~~Dr Windship merely lifts over 2000 lbs.~~

In walking on a level,
one lifts $\frac{1}{2}$ of his weight
(it is aughton) thro' the distance.
Ascending, the whole weight of the
body the whole height. —

(X) ^{Haw.}

Most healthy young men, not practised in walking, will find 15 miles a good beginning for a day's walk. While at Harvard as a student, I, with three companions, walked 22 or 23 miles ~~in~~ one 7th day; we were pretty tired. A man well built for walking can, in a few days, with proper rests between times, get up to 30 miles in a day; but only a minority can comfortably do that much for several days together. For advantage to health in pedestrian excursions, I would recommend an average of not more than 20 miles daily, beginning with less. Some should average only 10 miles

Daily Manual Labor as
doors averages 250 to 300
tons lifted 1 foot.

Each healthy man should
for muscular culture, at least
have enough exercise to equal
150 tons lifted 1 ft; a walk
of 9 miles ~~at once~~ would do
this.

on the march,
12 miles a day for a
soldier, with light weights — is
a good average; they have sometimes
done much more. ~~(X)~~ Haw.

Gymnastic training, now ^{is} in use
in British Army — at certain stations
at least — in France at Vincennes.

Capt. Boyter
in apparatus

2000 ft. lifted at once (1 ton) maximum

700 tons 1 ft. in 12 hours, ordinary work

Captain Webb swam Bt. Channel in 21 hours, 1875

~~circumference~~ (20 miles shortest direct; probably nearly doubled

The principle of the ~~health lift~~, as well

~~as that of the need of~~ proportionate repose

after every positive muscular effort, is illus-

trated in some facts concerning the great

rowing matches. In the ^{international} ~~great~~ contest between

the Harvard and ^{Oxford} University crews some years

ago (1869?) I believe an important element was,

that the Harvard men pulled 42 strokes to

the minute; the Oxford men 40, and won. In

1870, Cambridge beat Oxford, the first time for

many years, with 38 strokes to the minute. This

year, 1875, Oxford beat Cambridge, with

^{35 1/2} 36 strokes to the minute; and ~~last year~~, 1874

the Columbia College crew pulled the

winning boat at Saratoga on 34 to 35

strokes to the minute — with a rather quick

catch and strong pull, and then a good

easy pause in ~~the~~ recovery. [#] ~~isadeventures~~

→ Limits of perfect recovery — in Engineering & great matches

○ April, 1876 —

Boat-race between Cambridge
Oxford crews, on the Thames —

Cambridge started on steady
37 strokes a minute — Oxford
35. During the race, Oxford made
a sprint to regain lost distance,
with 40 strokes a minute; Cam-
bridge then 39, for awhile. Afterward,
but 37 steadily. Cambridge won
by 3 boatlengths. Time of both boats
best except twice in 39 years.
Oxford has won 25 times, Cambridge
18 times including 1876. ##

The corner-stone of a new College Building will be laid at the corner of North College Avenue and Twenty-First Street, Thursday, October 1st, 4 P. M., at the conclusion of Prof. Isaac Comly's General Introductory to the Twenty-Fifth Course of Lectures.

You are cordially invited to be present.

Edward Lewis,

Chairman of Building Committee.

Sep. 25th, 1874.

The word was given by Mr. Searle at 1:13. Cambridge jumped off with the lead, which woke a shout from the crowds on shore, who always seem to think that a lead is worth having at no matter what cost. In fact, Oxford were under severe orders to get away quietly, so as to avoid what was thought their only risk, the breaking of an oar or stretcher or rowlock at starting. So Cambridge went merrily ahead, Rhodes dashing into 38 to the minute, and getting a lead of apparently a length in a dozen strokes. I suppose it was Rhodes's only hope, to put some heart at the beginning into his much bullied crew, on the desperate chance of their being able to keep it when they had got it. For Rhodes is not the man to sacrifice anything to show, or to put in jeopardy a real advantage for the sake of a seeming one. He proved himself long since a general, and it is certain that if there had been anything better than this to do with his crew he would have done it. The bend of the shore, of course, helped on this bit of strategy, Oxford having to row the outside of the circle, Cambridge the inside. Not for that, or any other reason, was Oxford flurried. It was lovely to see Way—he, too, a general—settle quietly down to 35 and 36 strokes a minute while Light Blue was thus forcing the pace, and row every stroke completely through, as if on parade—and more so. Nothing in the race was so good. Cambridge were short. They have been short all through their practice. Catch at the beginning, has been their watch-word, and catch it has been, but with the unfortunate peculiarity of losing it after they had got it, so that they had better never have had it at all. This is, I believe, a unique experience in rowing. There has been nothing of late years—no one point in rowing, that is—by which so much store has been set, as catch, and the belief in its value is a thoroughly sound belief. Oxford lost it, Cambridge learned it, and then began the defeats of Oxford and the victories of Cambridge. Now, for the first time, we hear of a crew expert in that instant grip of the water at the beginning of the stroke, for which catch is the word rowing men use, and yet immediately after, for want of power or want of form, dropping it and commencing the stroke over again under water. Oxford, on the other hand, have never acquired it, but have made up for their lack in this single particular by length of reach and rowing their stroke through, and by many other good traits. The difference tells early in the race. Once past Craven Cottage, Cambridge, having worked up to 40 and declined again to 38, began to lose their lead. Then they came back to Oxford with singular rapidity. At the Crab Tree the two were once more in company—for the last time. Oxford went rapidly away, were clear at the Soap Works, led by a length at Hammersmith Bridge, and thence to the end won as they liked. There is really nothing more to tell. Dark Blue, rowing well within themselves, and beautifully clean, drew gradually further and further ahead.

under the calcium light of the Governor's message, illuminated as it is by the facts which the newspapers have been daily giving to the public and by the facts which have been presented to this meeting. I shall rather, in very few words, turn my attention to a suggestion which occurs to me from the remarks of my friend Judge Pierrepont and from the remarks of Mr. Prince.

They have told you that this is no party question, and they have pledged, so far as they have the right to pledge, the support of the Republican party to measures of reform. I think I am justified, from my position in the Democratic organization of this State, in saying that the Democratic party has no wish to make political capital out of this question. [Applause.] We don't want to make votes in the Democratic party out of it. We want an honest administration of the canals. The business of this city and of this State is *in articulo mortis*; in the throes of death, and if we can crush the wrongdoers in either party, then we have no right to complain that the evils are not redressed. But they will be redressed. The action of the Governor will be sustained by the people of this State. The victory is already won, unless the Canal Ring shall succeed in their only and their last effort. I wish to call your attention to their endeavor to break down the Governor personally. They accuse him of personal ambition. They tell you that he has got his eye on the Presidency. They tell you that this is an old story. They tell you that he presents no radical remedies to cure these evils. But I feel justified in going back three or four years in the record of Gov. Tilden. Before his successful attempt to expose the frauds of the Municipal Ring of New-York, Gov. Tilden had acquired a handsome competency. He was, if not at the head, certainly in the very front rank of his profession. He was surrounded by a library such as few men have ever collected together. He was preparing himself, as I know, as his intimate friend, for passing the evening of his days in those pursuits for which he was fitted by his education and by his tastes. If he had had any political ambition it would have been easily gratified. The administration of the City of New-York was in the hands of the Democratic party. The Democratic party had the government at Albany. Gov. Tilden, then Mr. Tilden, himself was the Chairman of the State Democratic Central Committee. He had only to say, "I want to be Governor of New-York," and there was no man to say him nay. He had only to sit still and hold his tongue and tolerate the abuses which had been brought to his knowledge, and whatever of political preferment which could come from the Democratic party was his.

But I can tell you, gentlemen, there was anxious consultation in those days. It was understood that when Mr. Tilden raised his voice in regard to the municipal frauds it was war to the knife. It was understood that the Democratic party was to be shattered in pieces and all that was claimed by honest Democrats was that they would prepare to dig the grave of the Democratic party, rather than see the City of New-York robbed as it was of the hard earnings of its honest people. The canal frauds were as well known to Gov. Tilden in 1871 as they are to-day. They say truly that they were no new thing. He knew then all about "unbalanced bids;" he knew about the condition of the canal; that when they told you it drew seven feet, boats drawing five feet of water dragged upon the bottom. He understood the condition of the locks. No man understood them better. The Canal Ring might have been attacked four years ago; but, gentlemen, there was an unholy alliance between the Canal Ring and the Municipal Ring of the City of New-York, and the task was too big. If Gov. Tilden had attacked the Canal Ring four years ago he would have failed. He began with the weaker wing of the army of corruption. The right wing was in Albany, the left wing in Washington, and the center was here in the city. He began with the City Ring and they were crushed.

Then gentlemen began looking around for a candidate who had the nerve to do this work at Albany and upon Gov. Tilden, and I can say to you that for

larynx in the shape of an acute congestion. Moreover, in the larynx, ulceration was observed very generally, either superficial or deep, penetrating to one of the cartilages. In one or two cases sudden death ensued from an acute oedema of the lining membrane of the aditus laryngis, a consequence of the ulceration.

Heart Disease from Over-exertion.—An important discussion recently took place at the Clinical Society of London, on the consequences of the extent to which rowing and other athletic exercises are used by young men. The discussion was opened by a paper by Dr. Clifford Allbutt, an university graduate and an Alpine climber, on overstrain of the heart and aorta. He was naturally, and especially as a young physician, lenient in his view of the part played by the abuse of athletics in the causation of the cases which he had observed; but he fully explained its mechanism. In the debate which followed (fully reported in the *British Med. Journal* of March 15) Dr. Greenhow stated that he had seen a dozen cases of harm from athletic sports, and at present had under his care a case of dilated heart from Alpine climbing. He expressed his opinion that injury from athletics was not uncommon. Dr. Poore referred to the case of the celebrated hound Master McGrath. At the *post-mortem* examination, Dr. Haughton had found the heart much dilated and greatly hypertrophied. Dr. Anstie referred to the case of a Swiss young gentleman, in whom severe angina was produced by inordinate walking. He remained in a dangerous position for some time, but at length recovered. Mr. Myers (Coldstream Guards) agreed with Dr. Greenhow in thinking that it would be a great mistake to encourage the youths of our country to undergo violent exertion, by letting it be supposed that athletic exercises did not sometimes injuriously affect the heart. It would be better policy to teach moderation, and thus prevent, or at least check, many cases of incipient heart-disease, such as irritability and slight hyertrophy, with or without dilatation. He believed that this, as a result of hard training in our public schools and

universities, was far more common than was generally supposed; but that it was not detected, owing to the time of life at which it occurred, and to the fact that after a few years these men led quieter lives, and did not therefore continue to overstrain their hearts. In proof of this early development of heart-disease by overstrain, Mr. Meyers stated that, after he had satisfied himself that the irritable heart of the young soldier was to a great extent induced by overstrain by tight clothing and accoutrements, he examined the pulses of men who had recently undergone hard training in the public schools and universities, with precisely the same result. The sphygmograph might be made of much use in the early diagnosis of this class of incipient heart-disease. Mr. Kesteven related the particulars of a case which had come under his notice in which cardiac disease from rowing existed. Dr. Farquharson, formerly medical officer of Rugby School, agreed with Dr. Clifford Allbutt that athletic exercises in moderation, and after due preparation, were seldom injurious. Bad consequences were only met with in persons naturally feeble, or temporarily debilitated, who undertook sudden and severe exertion without previous training. In the very few instances in which he had met with cardiac strain, while medical officer to Rugby School, the boys had usually been working hard, and had undergone excessive physical fatigue when worn out by mental labour. Assistant-Surgeon Nathan had analyzed a large number of heart cases at Haslar Hospital. Out of 850 in which he was able to determine their cause, 65 were directly due to violent exertion. Dr. John Ogle (of St. George's Hospital) said that, at the time of the discussion which some years ago occurred on the effects of continued and violent muscular exercise upon the heart, especially in connection with the observations of the late Mr. Skey, he was much impressed with the idea that the evils consequent on rowing, gymnastics, cricket, and other athletics, had been greatly exaggerated by some, and much under-estimated by others. Whilst firmly believing in the advisability and

Mr. Meyers (University Oarsmen)
found 294 oarsmen while students,
about 1 in 15 reported themselves injured.

1873

an essential difference between the cases where the patients sank during an attack, and those in which they died in the stage of remission, or during the re-convalescence. In all, the *spleen* was enlarged (in some cases even unto rupture); in the first it was of a dark-blue colour, and resistant on pressure; in the latter of a bright-red colour, and with a soft, flabby consistence. On a section of this organ, one finds a diffuse, venous congestion, attended with a general hyperplasia of the pulpa and of the follicles. In no other disease is the swelling of the Malpighian corpuscles so striking; they present a whitish-yellow colour, and occasionally an abscess-like appearance. In some cases, in addition to these diffuse changes, distinctly circumscribed portions, which resemble, as well in situation as in appearance, the different stages of embolic infarcts, are met with. They are of a round or wedge-like form, generally located immediately under the capsule; in the earliest stage dark-purple, then gradually assuming a lighter colour, even unto a pale straw. Like the infarcts, they later become necrotic, form sequestra, and may so cause perisplenitis, or even—when the process is extremely active—penetration of the capsule and subsequently peritonitis. In two cases, which came recently under my observation, death ensued by a general peritonitis from such an accident.

The *liver*, like the spleen, is always abnormally large, of a reddish-yellow colour, and firm against pressure. On section, the liver tissue is somewhat pale, and manifests the usual appearance of fatty infiltration. On the microscopical examination one finds the liver-cells more or less filled with fat, and the inter-acinous connective tissue is considerably increased. Probably, a part of these organic changes owes its origin to the abuse of alcohol, so often practised by these patients. The bilious ducts are filled with retained gall-fluid even unto the remotest ramifications. But yet the ductus choledochus is free, and the contents of the intestines have their normal colour.

The *kidneys* especially demand the attention of physicians, in that the appearances evident during life render an exact

diagnosis of their condition practicable. Careful observers have lately pointed out, that the urine during an attack of relapsing fever is liable to a series of important changes; for example, fresh blood, hemorrhagic, or fibrinous cylinders, and fatty degenerated epithelium, are found separately or together in the majority of cases. On an examination, the kidneys show an enlargement in every diameter; the surface is generally pale, often variegated with hemorrhagic spots. On the section the cortical substance is swollen and somewhat cloudy-opaque, with here and there brown and red lines, indicating old and recent hemorrhages. The pyramidal portion is only slightly swollen, but presents also many converging gray streaks, often mixed with brown. A microscopical examination reveals that particular condition of the epithelium, lining the tubuli contorti, to which Virchow has given the name "parenchymatous inflammation; that is, a degeneration of the cell protoplasm, characterized by the appearance of albuminous granules, which later undergo a fatty metamorphosis. On the red or brown spots one finds red blood-corpuscles, not only free, but also inclosed in an exudative mass. The fibrinous casts are generally found in the tubuli recti of the pyramidal portion. In some rarer cases hemorrhages are observed, not only in the secretory substance, but also in the pelvis of the kidney, and even in the bladder.

Notwithstanding these extensive organic changes the patient often attains a state of convalescence. But now another serious danger threatens in the intense susceptibility of the *respiratory organs*. It is striking, that the convalescent from relapsing fever is peculiarly predisposed to affections of the respiratory tract, and naturally a patient so debilitated is rarely able to resist such a new attack. The pneumonia most generally observed is fibrinous and lobar, and takes its origin in the majority of cases in the base of the lung. In other cases there is catarrhal pneumonia, with a lobular infiltration more or less confluent. In the later periods of the disease some dangerous symptoms are apt to arise in the pharynx and

necessity of encouraging athletics at our universities and public schools, he was of opinion that there existed evidence showing that in many cases health was injured and lives damaged and impaired, by undue exercise at the universities, etc.; though, of course, it would be as absurd as unscientific either to condemn or to support any system merely upon the strength of a limited number of cases. In all probability, severe athletic sports would not do harm in the case of those whose organs were sound and free from disposition to disease, and who were trained wisely and cautiously; but in large collections of boys and young men there must of necessity be many who spontaneously undertook, or have been induced to undertake, severe sports, and who were, naturally or from temporary causes, quite unfitted for them. Many undergraduates possessed delicate organs; and he believed that it would be prudent if at the universities and schools those who intended to row, or participate in any violent games, were obliged to obtain a certificate from some competent physician as to their being in a state to undertake such exercises, and under what conditions and restrictions (if any were requisite). Dr. Ogle had seen an oarsman at Oxford taken out of the boat casting up blood profusely. Dr. Church and others had seen hæmoptysis ensuing upon violent rowing. Dr. Ogle had lately seen a gentleman, aged forty, residing on the banks of the Thames near London, who took pupils preparatory to the universities, and who was in the habit of pulling in a four-oar with them every evening. He had a decided hypertrophy and valvular mischief of the heart, traceable solely to regular and severe over-exertion. Dr. R. J. Lee said that the universities would perceive with gratification the tendency now prevailing to consider the subject of exercise with scientific attention; and he regretted that the medical profession had hitherto refrained from doing so. The enumeration of isolated cases in which injurious results had followed excessive exercise was not a scientific method of investigating the principles by which exercise was to be regulated. He had for some years been

engaged in considering the subject of exercise and training with a view to correct the mistakes which were made, and to prevent those unfortunate consequences which ignorance produced. The different effects produced upon the heart and vessels by different kinds of muscular exercise might be divided into two classes: those resulting from briefly sustained but very active exertion, as in short, quick races either on foot or in a boat; and those in which the exercise was not in the same sense excessive, but was sustained for some hours, as in Alpine climbing. In the former case, the muscular contractions were so powerful as to force the blood from the veins, arrest its flow through the arteries, and so produce congestion of the heart. Those who were in the habit of rowing much in races were well aware of this fact, generally known as "losing wind," and were particularly careful to avoid it. In the case of Alpine climbing, which resembled to some extent the muscular exertion employed in those cases referred to by Dr. Allbutt, the organs of respiration were chiefly oppressed, and the tension of the vessels was increased considerably. The right side of the heart was more often affected by such exercise.—*London Med. Record*, March 19, 1873.

[This discussion is well worthy of consideration in this country, where rowing, base-ball, cricket, and gymnastic exercises are often indulged in to the great injury of some of the participants.]

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Ligation of the Arteria Innominata.—Mr. E. S. O'GRADY, of Mercer's Hospital (*Brit. Med. Journ.*, May 10, 1873), lately ligatured the innominate artery for an aneurism of the subclavian in a patient nearly sixty years of age. The common carotid artery was also tied, but death took place the following day, with apoplectic symptoms. No post-mortem examination was permitted.

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Treatment of Pyelitis by the Inhalation of Oleum Pini Æthereum.—The Vienna correspondent of the *Irish Hospital Gazette* (April 15, 1873) reports that Prof. DITTEL, the well-known stricture special-

Lillywhite, the best cricketer in England,
died under 50, a few years ago.

Renforth - died immediately after a match (rowing)
about 1870 or 71 or 2

ist, has for some time past employed inhalations of oleum pini æthereum (obtained from the cones of several indigenous species of pine), with great success in cases of pyelitis. Even after the first few inhalations, the characteristic smell of violets can be detected in the urine, and at the same time the pain and constant and distressing inclination to make water cease, the amount of sediment in the urine diminishes, and soon both ease and sleep return to the patient. Inhalations are, however, only useful in cases of uncomplicated pyelitis which have not been too long neglected. In cases where there is any complication (more especially nephritis), we must proceed with the greatest caution, and only continue the inhalations so long as the inclination to make water lessens, and the absolute quantity of sediment in the urine diminishes. Should fever be set up, and should the inflammatory symptoms increase, further inhalation will only do mischief. At first the patient inhales only twice a day, for about five minutes each time; if he bears this well, and should no contra-indicating head symptoms appear, then the number of inhalations may be increased to three or four. Should he be attacked with headache or sickness of stomach, we must stop the inhalations.

The chief difference between Dr. Dittel's apparatus and others is, that in his the fluid through which the patient inspires is not warmed. This simplifies it greatly without injuring its usefulness, a great object in practice. The apparatus consists of a wash-bottle, such as is to be found in every chemical laboratory, slightly modified; in other words, a middle-sized bottle with a large body, gradually tapering to a long neck. In the stopper, which is made of India-rubber, there are two holes, through each of which runs a glass tube, one reaching nearly to the bottom of the bottle, the other to within two inches of the contained fluid. To this last tube is fastened an India-rubber pipe, and to this again a mouth-piece, modified so as to suit the patient. For the sake of cleanliness this mouth-piece is, in Dittel's clinique, made of glass. In an emergency a quill is a good substitute. If now, after

from 4-6 oz. of the above-mentioned balsamic oil have been poured into the bottle and well corked down, the patient draws a deep breath through the mouth-piece, the air of the room enters through the second tube, traverses the fluid and enters the lungs impregnated with particles of the oil. The smell of violets, which may soon after be detected in the urine, gives us sufficient proof that the oil has entered the circulation, and has been excreted by the kidneys. Dr. Dittel recommends this method, which is also suited to other catarrhal affections (for instance, pulmonary emphysema) very warmly for further trial, and confirms the good results obtained by it by the enumeration of numerous cases in one of our medical periodicals.

Veratrum Viride in Acute Rheumatism.—Heuser (*Allg. Med. Centralzeit.*, Jan. 1873) considers veratrum viride to be superior to any other remedy in acute rheumatism. He uses a mixture of 1 part of the tincture with 4 of rectified spirit and 5 of water. Three to five drops of this mixture are given every two hours, and the joints kept warmly rolled up. The author has also observed the best effects result from its use in pleurisy, and considers that it will supersede digitalis in pneumonia and bronchitis. He warns against the use of large doses, which impair the remedial action of the drug. Five drops of the tincture reduced the pulse rate to one-half, and produced vomiting, weakness, cold sweats, a feeling of tearing and numbness in the extremities, and muscæ volitantes.—*London Med. Record*, March 19, 1873.

Local Treatment of Skin and Syphilitic Diseases.—In an article published by Dr. GAMBERINI in the *Giornale Italiano delle Malat. Ven.*, the author gives a list of the various cases treated in the special department of the Hospital Sant Orsola of Bologna, and makes the following remarks as regards the local treatment of the skin manifestations: "In soft ulcers, iodoform combined with glycerine was eminently successful (two drachms and a half of iodoform to one ounce of glycerine). Carbolic acid and tincture of iodine were

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NATURE

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THURSDAY, MARCH 27, 1873

UNIVERSITY OARS

I.

WE have, not without motive, adopted the title of Dr. Morgan's book,*—so opportunely timed in its issue by its University publishers—as the heading for some considerations connected with the coming river "Derby;" for we propose to pass in review the leading features of the Hygienic value of these contests, which are claiming and receiving from year to year a growing importance, into which the book itself is an exhaustive inquiry.

Many a strong hand will tremble as it lifts this book for the first time, and many an eye will glisten with pleasure or grow dim with regret as it scans its lists and tables and reads the revelations made therein. For what do they tell—and tell too with a rare fulness and circumstantiality? All particulars as to the health, past and present, of the Oarsmen of both Universities who have rowed in the annual matches during the last forty years; that is, from the time of their organisation up to the last race rowed before the author began collecting the materials for his book. Year by year the crews are formed and the races rowed. Year by year the races pass and are forgotten, and the crews disappear and are *not* forgotten, although they may pass away from our sight. What has become of the old Oarsmen, the friends and favourites of other days? Are they "doing duty" in peaceful country parishes, or in crowded cities at home? or have they venturously gone forth to new lands to seek for more genial employments than the old one yields? What are they doing now? how fares it with them? and above all, have they suffered in heart or brain, in nerve or lung, from their old practice at the oar? The ample lists in Dr. Morgan's book, his own ably written pages, and the liberal extracts from his correspondents' answers to his queries—his correspondents being the oarsmen themselves and his queries being with sole reference to their health and bodily condition—tell us all: tell us where they are, what they are doing, what they did when with us and how they did it; and, in their own language, tell with characteristic frankness, and in words which we can still recognise as their old modes of expression, what they think and believe for or against their old favourite pastime. All write cheerily, and all to a man almost speak with prideful remembrance of their work at the oar, and the good they have derived from it. From Bengal writes McQueen:—"I am now a stout man, weighing fifteen stone, but able to be in the saddle all day without fatigue, or if necessary walk my ten or fifteen miles without any distress." We wonder if he still possess the same hand-power that he had in his youth? He had simply the strongest hand and wrist we have ever known, and never did we place our own palm in his without setting our teeth close, and subjecting the member when set free to a gentle manipulation, to restore circulation and revive feeling in its flattened digits. His was the true Herculean build. Nind writes from Queensland on

* "University Oars." By John Ed. Morgan, M.A. Oxon, F.R.C.P. (Macmillan, 1873.)

"Since taking my degree in 1855 my constitution has been put to the test in many climates, for I have lived in Canada, on the west coast of America, and in Australia, and I can safely aver that I never have in trying circumstances found a failure of physical power; and that when hard pressed by fatigue and want of food, the recollection of the endurance developed by rowing and other athletics gave me fresh spirit and encouragement." And yet Nind was not naturally a powerful man. His frame was the very antithesis to that of McQueen. Those who remember him as he first came to the University will recall his exquisitely moulded features, almost feminine in their softness and sweetness of expression. Schneider writes from New Zealand:—"I may state that so far as I am concerned, I am able to discover no particular symptoms either good, bad, or indifferent specially attributable to rowing. . . . I now come to what I believe to be the chief if not the only real danger attendant upon Boat-Racing, and that is the violent strain upon the action of the heart caused by rowing a rapid stroke and exerting every energy to maintain the same to the end of the race."

Who among us could argue the matter more wisely? These are bright and pleasant pictures, but like all other pictures, they have their dark side. In the lists of Oarsmen certain names are printed in italics—not many, thank God!—a small percentage only. These are they who have rowed out their life-race; who have for ever passed out from their period of training and of trial. They rise before our mind's eye as we first knew them. Brewster's magnificent form towering half a head above his stalwart shipmates. Men are all wise after the events; and we hear now of those who always doubted his real strength and stamina, and point to his untimely end as evidence of their own penetration. "Invalided from his regiment, caught cold by returning wet from a Brighton Volunteer Review: died from its effects." Polehampton, the chivalrous, the gentle, the brave! "Decorated while at college with the Royal Humane Society's Medal for saving a companion from drowning at his own imminent peril. Shot through the body at Lucknow—and died of cholera when attending to his comrades stricken by the same malady." The very career he would have marked out for himself, had it been left to his hand to trace it! Hughes, the accomplished, the frank, the manly—the very nature that, speaking in our love and in our pride, we emphatically style the beau-ideal of an English gentleman—"died last year of inflammation of the lungs." Here our personal reminiscences of old oarsmen must cease.

For many a long year strange tales of the risks and dangers of rowing, or rather of boat-racing, have had a floating existence in the Universities, and gaining strength and circumstantiality by time and repetition, have extended to wider circles. While the old tales lived and held their own, other and more startling legends sprang up, and also grew into importance, legends so alarming, and related with such circumstantial detail, that the most sceptical began to think that "there must be something in it." Whole crews, it was stated, had been swept off in a few brief years by their terrible struggles and efforts at the oar. This feeling of uneasiness, if not of absolute alarm, attained a sort of climax a few years ago by the letters of an eminent surgeon, published in the *Times*.

For reasons which seemed to his professional judgment sufficient, he took the side of the alarmists, and pronounced an opinion, strongly expressed, against boat-racing as now practised. These letters were answered with more or less ability by votaries of the oar, men then actively engaged in rowing, or who had recently been so. The controversy lasted for some time, and at last rather died out, or was allowed to drop, than brought to any satisfactory conclusion by the arguments or proofs advanced on either side. By the opponents of boat-racing the case was opened rather unguardedly by statements requiring a stronger array of facts than could be brought to support them when the call for proofs was made; by its defenders was met by the somewhat blunt rejoinder, "You don't know anything about it; you never lifted an oar in your life." The former forgetting that there is nothing so difficult to overcome as enthusiasm, *esprit de corps*, and, perhaps, prejudice; the latter forgetting that the effects of certain modes of exertion on certain organs and tissues of the human body may be sagely divined by a skilful and experienced physician or surgeon, without his ever having in his own person practically undergone such exertion.

As we have said, the argument dropped rather than was brought to any satisfactory conclusion, and if each side did not claim the victory, each stoutly denied that the other had won. Unto this day do we hear alarms sounded with reference to these races, again does paterfamilias feel nervous qualms at the intelligence that his son has betaken himself to the river. Again do non-rowing men console themselves for the want of river distinctions by the thought of their exemption from its risks and liabilities, and again do rowing men enjoy the *éclat* of having greatly dared for the reputation of their Colleges and University, with the secret conviction and comfort that the dangers they have run have been very slight indeed.

It was to close this open question for ever, and settle once for all this standing dispute which has many scientific aspects of great interest, that Dr. Morgan undertook the present work, recognising evidently to the full the standpoint selected by the disputants in the controversy, the one, their practical knowledge as experienced oarsmen, the other, his theoretical knowledge as a scientific surgeon; for, as the author informs us, his qualifications for the task are twofold:—

"As a physician to a large hospital, I have necessarily enjoyed large opportunities of gaining an insight into the laws which regulate our health, while my rowing experience began at Shrewsbury (where I spent many a pleasant hour on the Severn), and was matured at University College, Oxford, where I was for three years Captain of the John +, a boat which has often played a prominent part in the struggles on the Isis, and which has served as the training school for no fewer than ten of the crews which during the last thirty years have won the University Fours."

These qualifications certainly seem adequate to the task, and the plan pursued by Dr. Morgan also seems the best possible, albeit entailing enormous labour on, and demanding vast patience from, him. This plan was simply to institute a strict and exhaustive search after all the men who have rowed in these inter-University contests; to track them, as it were, to whatever part of the world they may have gone: this done, to get their own written

testimony, if alive, and that of their friends, if dead, as to whether the part they played in these contests entailed any after evil results upon their constitutions and frames, and (if any) their nature and extent.

Considering that more than forty years have elapsed since the commencement of these friendly contests, and that between the years 1829–1869 twenty-six races have been rowed, giving for the crews of both Universities, and allowing for men who have rowed in more than one race, the gross number of 294 men, the task was a formidable one; but, we must add, has been as ably conducted to its conclusion as it was resolutely undertaken. The author has ascertained that out of these 294 men 245 are still living—39 having died: the time of their death and the ailment of which they died are carefully given by the author, and to this point we will return. He next tabulates the following results elicited by his inquiries:—

Benefited by rowing	. . .	115
Uninjured „	. . .	162
Injured „	. . .	17

The *benefits* derived are somewhat vaguely stated, as indeed was to be expected when almost the only benefits that could be reasonably derived from such pursuits would be of a *general* nature; such as increase of strength and stamina, increase of energy to undertake, increase of power to undergo, physical exertion; increase of fortitude to encounter and to submit to trials and privations and disappointments. A goodly list of benefits when critically examined. The *uninjured* are those who in their replies to the author's queries state *negatively* the results of rowing upon their constitutions and frames; or, in the author's language, who merely say in general terms "that they never felt any inconvenience from rowing;" while the *injured* are they who state with less or more distinctness that their exertions proved harmful.

We must confess that this last item in the bill, the 17 injured, is at first sight a little startling, and so it must, we think, have appeared to the author, for he very carefully and minutely examines the cases so recorded, and some, we think, successfully dismisses as unreal; while others, we fear it must be candidly avowed, must remain as *bond fide* instances of injury. But is this a matter to be wondered at when the number of men who had been so engaged is taken into consideration? Is there any other pastime or pursuit in which grown men can take part, such as draws forth at the same time their bodily power and keenest emulations, which will yield a smaller percentage of evil? Would the hunting-field, would the foot-ball field, or even the cricket-field, if closely scrutinised?

The author tells us that during his inquiries on this subject he has written over two thousand letters. We can well believe it, knowing how unwilling many men are to reply to personal inquiries, and specially so when the inquirer asks after personal ailments. He has not however done himself justice in not giving us in his book a specimen of his letters addressed to his scattered correspondents; for in all cases of dispute, and contested evidence, it is always a matter of objection if the question as put indicates or leads up to the sort of answer desired; and when, as has been already said, scepticism on one side and *esprit de corps* on the other so strongly prevails, doubts may be entertained of the accuracy of some of

about 1 in 15

—
Captain Webb.—A recently published graphic “tracing” of the heart’s action of this gentleman, who accomplished the extraordinary feat of swimming from Dover to Calais, affords a useful warning to athletes. It is described by Mr. Myers, surgeon of the Coldstream Guards, an expert on the subject, as typical of a heart

gates, American
representing the American Medical Association and the State and Territorial Medical Societies of the Union; the latter the principal medical societies of other countries.

“II. The officers shall consist of a President, ten Vice-Presidents, four Secretaries, a Treasurer, and a Committee of Publication, to be elected by the Con-

FOREIGN

that has undergone some inordinate strain and has taken on a condition of irritability, with probably some hypertrophy. It is precisely the character of pulse which he invariably finds in those young soldiers whose hearts have been overstrained in their special calling; a subject to which he has devoted some attention.

It is only an exceptional organism that can endure the terrible strain involved in great athletic feats. Many a fine young fellow has been irretrievably ruined by such efforts, and very few are benefited.

—*The Sanitary Record*, Oct. 30, 1875.

S FOR 1876. . . .

AMERICAN JOURNAL OF THE MEDICAL SCI-
er to maintain for 1876 the very liberal terms
the Editors in the effort to render these peri-
eading physician.

SCIENCE" will thus preserve the features
of presenting every month a carefully con-
the improvements and discoveries reported in

During the past year it has thus contained
8 ARTICLES ON MIDWIFERY AND GYNÆCOL-
OGY.

8 " MED. JURISP. AND TOXICOL.

8 " HYGIENE.

an elaborate Index, forming an octavo vol-

AL SCIENCES" will contain during 1876, in
OF AMERICAN MEDICINE" in the shape of

Calisthenics — with
light apparatus & many
various easy movements,
best suited to the young of
both sexes, & those of
deficient strength — even
some invalids. Sometimes cura-
tive in Chorea. This method
develops all the muscles
in proportion; & thus is favorable
to grace in the female as well
as the male sex. (~~See Hopkins~~)
Grace is maintained by strength
& ease, — the latter requiring not
only power, but harmony of movements.
Hodg's carrier — Consumption. Miss
Hopkins

^{ancient} ~~Gymnastics~~ = Gymnastics (1)
The "German System" of heavy
Gymnastics (running, leaping,
lifting, ~~swimming~~, climbing, dumbbells)
first practiced cuts-stutts in
Calzmann's institution at Schnep-
-fenthal in Saxony, 1784. Systema-
tized & popularized by Prof. Jahn
in 1810 in Berlin - introduced into America
in 1825 at Northampton Mass. in a School
by Dr. Ch. Beck. He pub. "a treatise on Gymnastics"
1828. Winslow's principle - within capacity.

Light Gymnastics, for health
& sick, for equable muscle develop-
-ment, Ling the Swede; Dr. Lewis.

Dr. D. L.'s first instit. dates 1859.
May tire a heavy man. (Harvard 80 lbs, Cambridge 70 lbs, 42 40 38 st. per cent)
History of Dr. Winslow's gradual method

Both good - light first -
Calisthenics - strength and grace.

Calisthenics — with
light apparatus & many
various easy movements,
best suited to the young of
both sexes, & those of
deficient strength — even
some invalids. Sometimes cura-
tive in chorea. This method
develops all the muscles
in proportion; & thus is favourable
to grace in the female as well
as the male sex. (~~Miss Hopkins~~)
Grace is maintained by strength
& ease, — the latter requires not
only power, but harmony of movements.
Hod carrier — Consumption Miss
Hopkins

Modern Gymnastics

first in Germany by
Luthe and Pestalozzi.

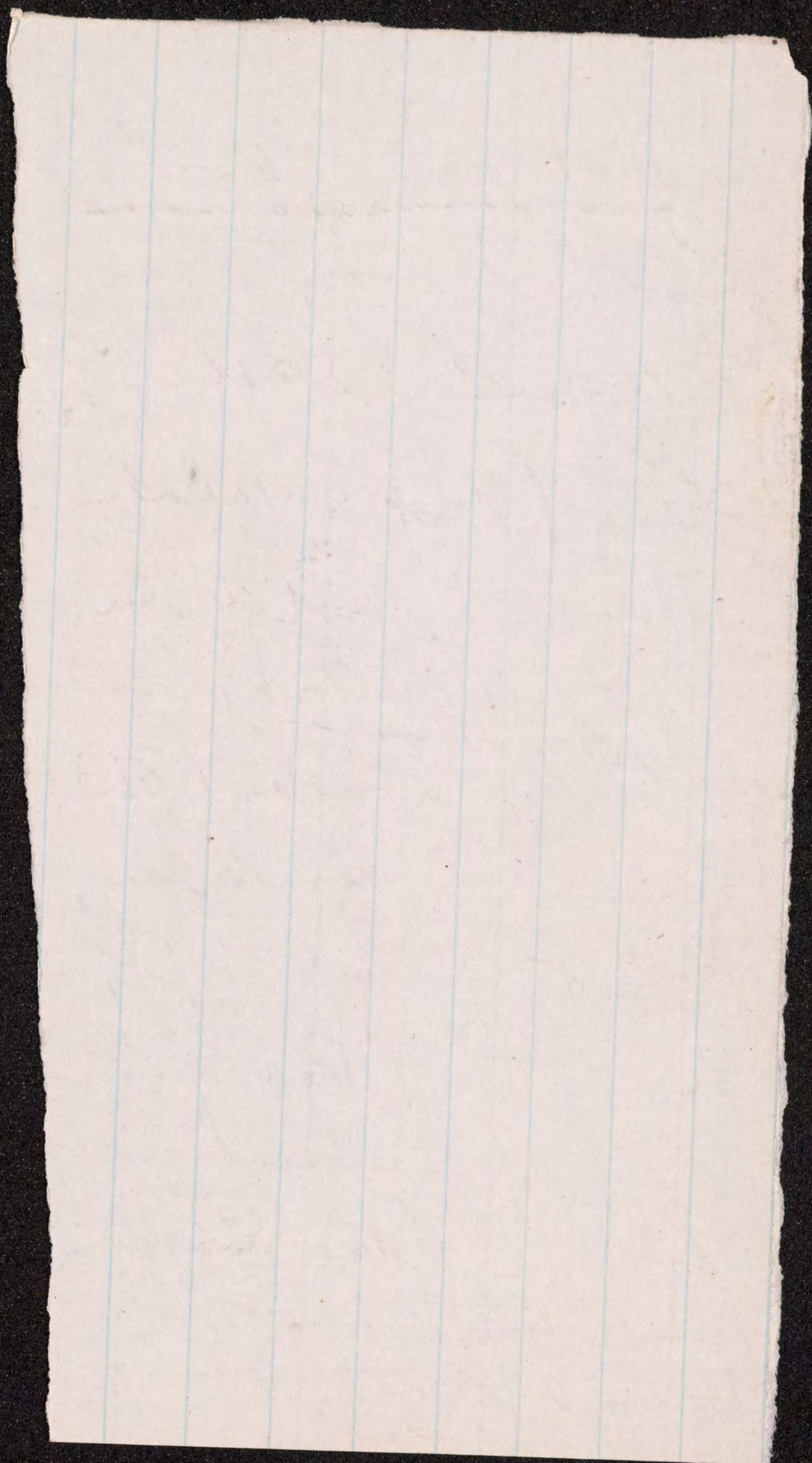
Ling (Poet & member
of Royal Swedish Academy
of Science & Art) an
ex-Government
institution in London, 1813.

Prussia a similar one,
1848, through Capt.

Rothstein, Bavaria,

Austria, Denmark,

France, ~~have~~ made
phys. training part of the
National & Military education.



(2)

Dr. Henshaw's history of himself.

1869

1870

Cambridge 38
per minute
Henshaw

Proportionate skilled use of muscle: Harvard 42 strokes, Oxford 40.

Training — for pedestrian feats,
foot races — prize fights — rowing matches &c
was formerly on fall
continued

Motions: — purging Sweaty
&c —

Now the motto is — "Work
(Diet; — ^{better,} or "Work, nourish and rest."

Food plain, but nutritious & regular —
or total abstinence
temperance in drink — no spirits &
little or no ^{at least} the alcoholic ^{beverage} ~~drink~~
or tobacco — ^{none at all} for those not long accustomed to it,
great cleanliness,

pure air for sleep — with not
too soft or warm a bed:
work, moderate at first, as
reported intervals thro' the day —
gradually increased. — Time 6 weeks

* In 1871, Weston walked 400 miles within
five days.

$\frac{245}{12}$ a hour.

At height of training —
^{at least} ~~from~~ 8 to ^{are spent} ~~about~~ 10 hours in sleep —

4 in meals & rest — other
the 12 in more or less severe
exercises — or walk; quick.

This is pretty tiresome; — but
if well adjusted — health &
strength greatly improve.

If not adapted properly,
a man may come out of it in
worse condition than he
began with —

Pope intends great & important
— 1000 miles in 1000 hours — ^{100 miles in 24 hours} done, 1869.
^{Victory, 1870.}
Not a day's rest; then, marching; then, B...

~~Notes out~~

Training (Robertson) —

Breakfast at 8 — beef or mutton
cracker or biscuit — little liquid.

Dinner at 2 — cutlets, roast meat,
chicken, ~~cracker~~ ^(omitted, better, here) a little beer
or weak wine — no spirits.

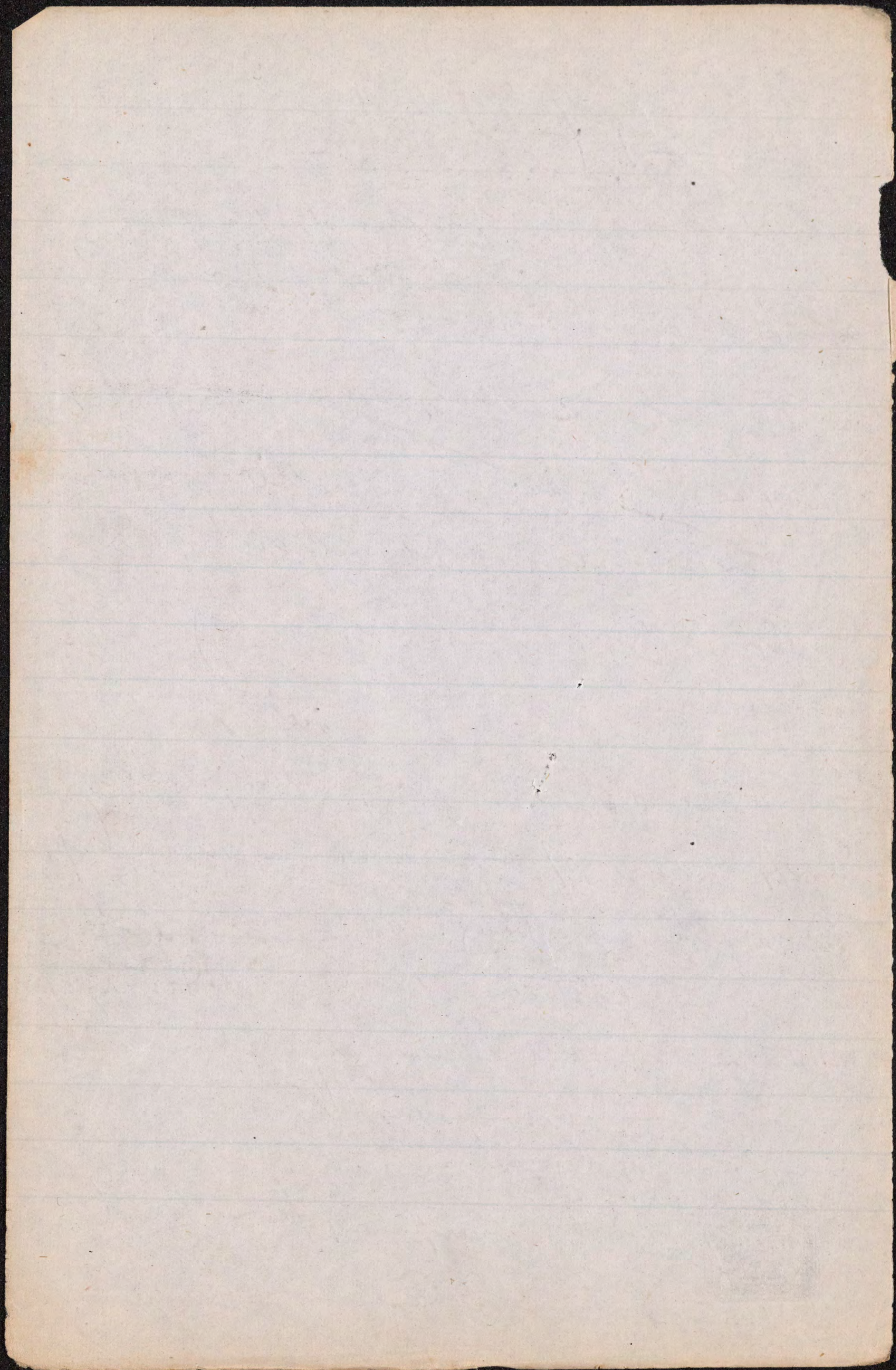
At 8 P. M. — (bed at 10) a little
cold meat & biscuit.

Rise at 5 — summer, dawn, winter; then
3 or 4 hours of exercise — running, leaps,
horseback, walking. (This too long before breakfast)

Same between breakfast & dinner, or
ball, boxing, dumbbells.

After dinner, walk, run, or ride
on horseback.

7 hours sleep on hard bed.
Frictions after, to leave sweaty.





Marching.—

(Principles good for the
private pedestrian as well as for the soldier.)

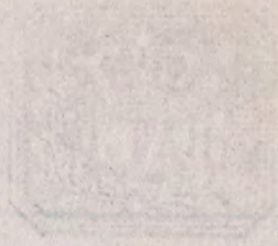
Recent experience ~~in this~~
in Europe, as well as ~~still more~~
in this country, — has led to
great improvements in economizing the

physical force of men.
~~While we may well lament that there should~~
~~have so destructive an application~~
~~yet we may well appreciate the rational~~
~~principles involved.~~

Dress & equipage ^{of soldiers} are now
much lighter, than fifty or even
thirty years ago — & the mode
of marching, altogether much easier.



In the English Army now, &
under some English Commanders,
as well as in ^{this country} ~~our army~~, — the
men are allowed to march
easily & discomt of except
on parade or when closed
up for special purpose in
action. (The man-machinery
of war ^{has been} ~~is~~ allowed more freedom
of movement, by far, in this
country than elsewhere; as,
here, more than anywhere in the
^{unless in Germany, perhaps,}
world, ^{as it true,} as Kossuth
said, that "even the bayonets
think" "The best thought of our greatest
general has been expressed in the words "Let us have peace.""



D Parkes gives the Length
of the English marching step, as
in Slow or Quick time, 30 inches:

Double 36 "

on Slow time) 2.1 miles in an hour
without halts;

Quick time, 3.1 " "

Double (really a run) 5.1 "

The ^{quick}Double is of allowable for a short
time; & the French army by rule
never more than 20 minutes.

~~With halts~~ Quick time is
most common; reduced by halts to the
rate of 2.8 miles per hour.



The front step is but 2.6 in.

The men are very short
even than in England; much shorter than in this country.

(Little fellows of content -

Brown James & Robinson

little men do ~~very well~~ after my operation, 1859

Napoli. I know a little man—
Wellington rather small. ~~So is Frank.~~

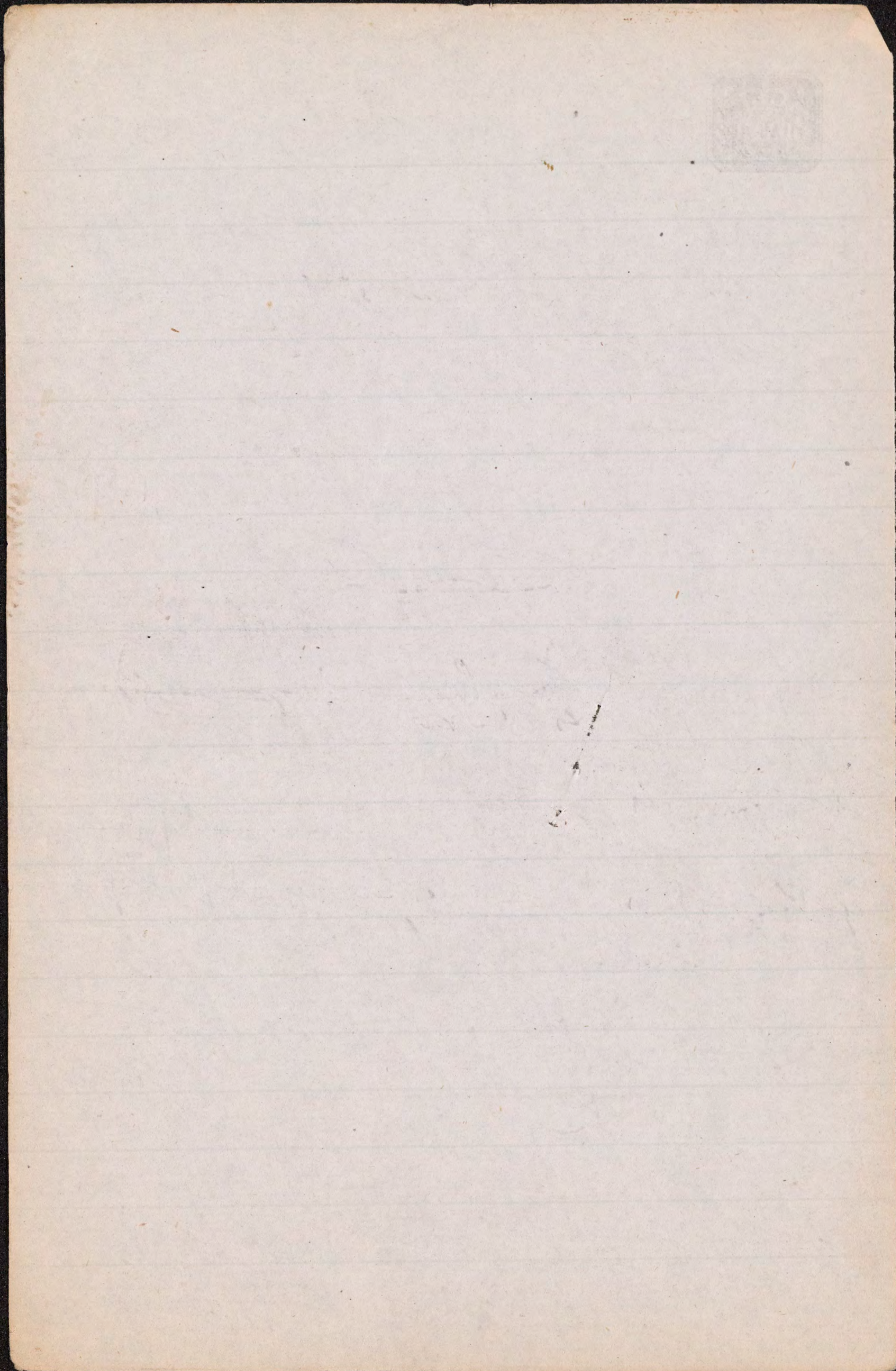
Middle sized men march longer
without giving out
than very tall ones. — Young soldiers

not physically mature - under 20 years - the first Napoleon
found to give out too soon.

Copy of *Journal* of the Russian & Baranian step 30 in.

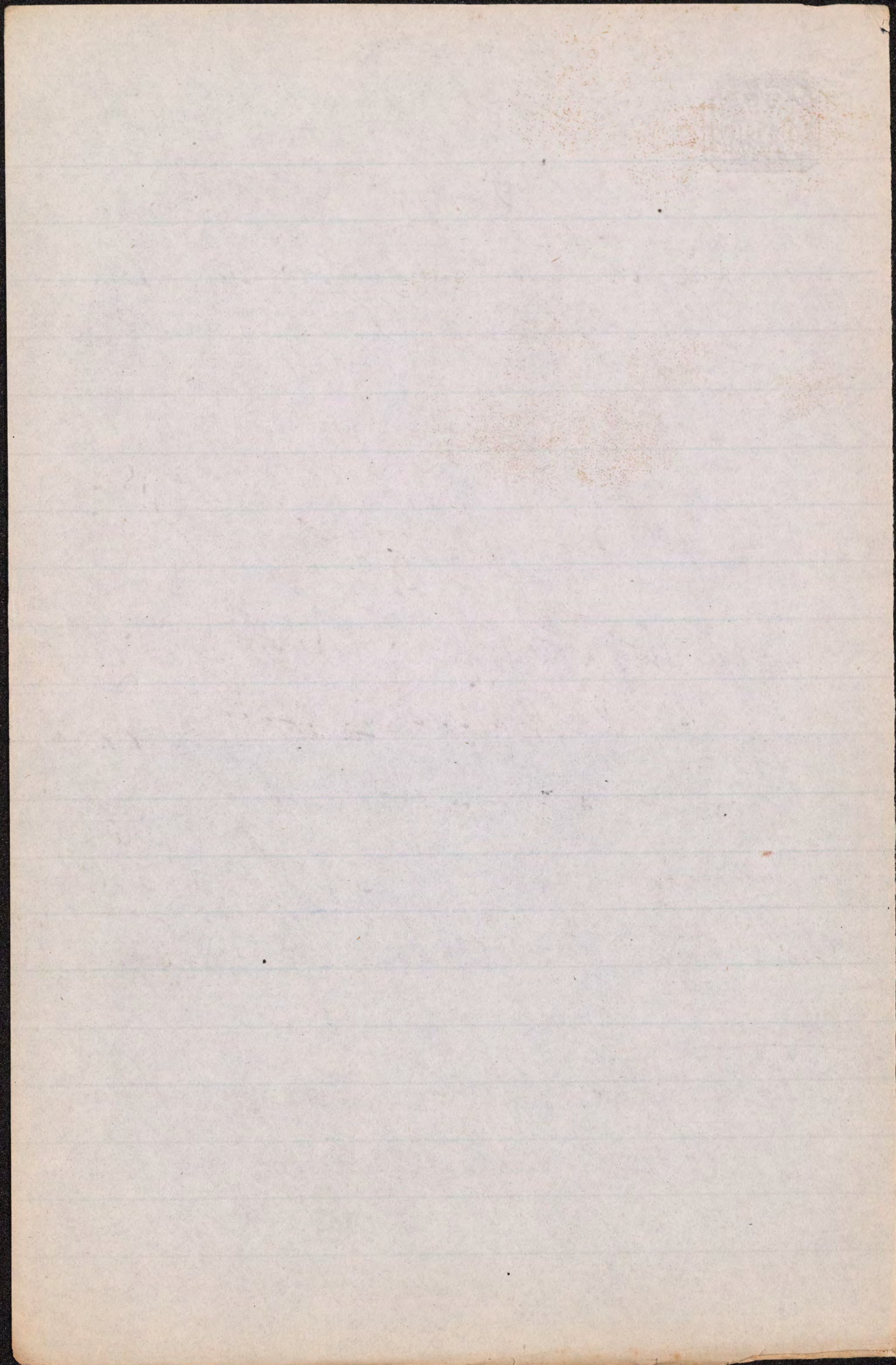
The Members, physical, fix a man's
average step at 28 in.

With weight ^{to carry} step must be shorter.
European ^{carrying} Soldier's weight about 60 lb. -



Ordinary length of a days
march is ~~usually~~ 12 miles, — a
forced march ^{may be} 25 to 40 miles
in 24 hours.

French & Spanish, ^{are said to be} better mar-
chers than English. I presume
some of the American ^{especially Sherman's} marches must
have equalled any of the European;
although in the ^{late} war the rate
of marches was far from being
always remarkable. The
endurance of the soldiers, on both
sides, — through long and daily
repeated battles, was much more
so. I believe the world never saw
such battles, in this respect before.

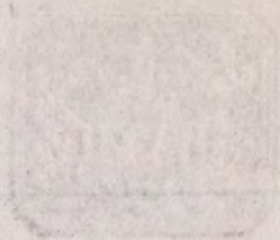


As examples of hard marching, —

3 British regiments in India
in 1809, marched 62 miles in
26 hours — each man carrying
from 50 to 60 lbs. — Half left
50 weak men behind — there
were only 17 stragglers.

One of the same regiments —
(the 52nd foot) — in 1857, — marched
42 miles in 20 hours, part of
the sun. Next morning they marched
10 miles & engaged the (Sepoys?)
enemy.

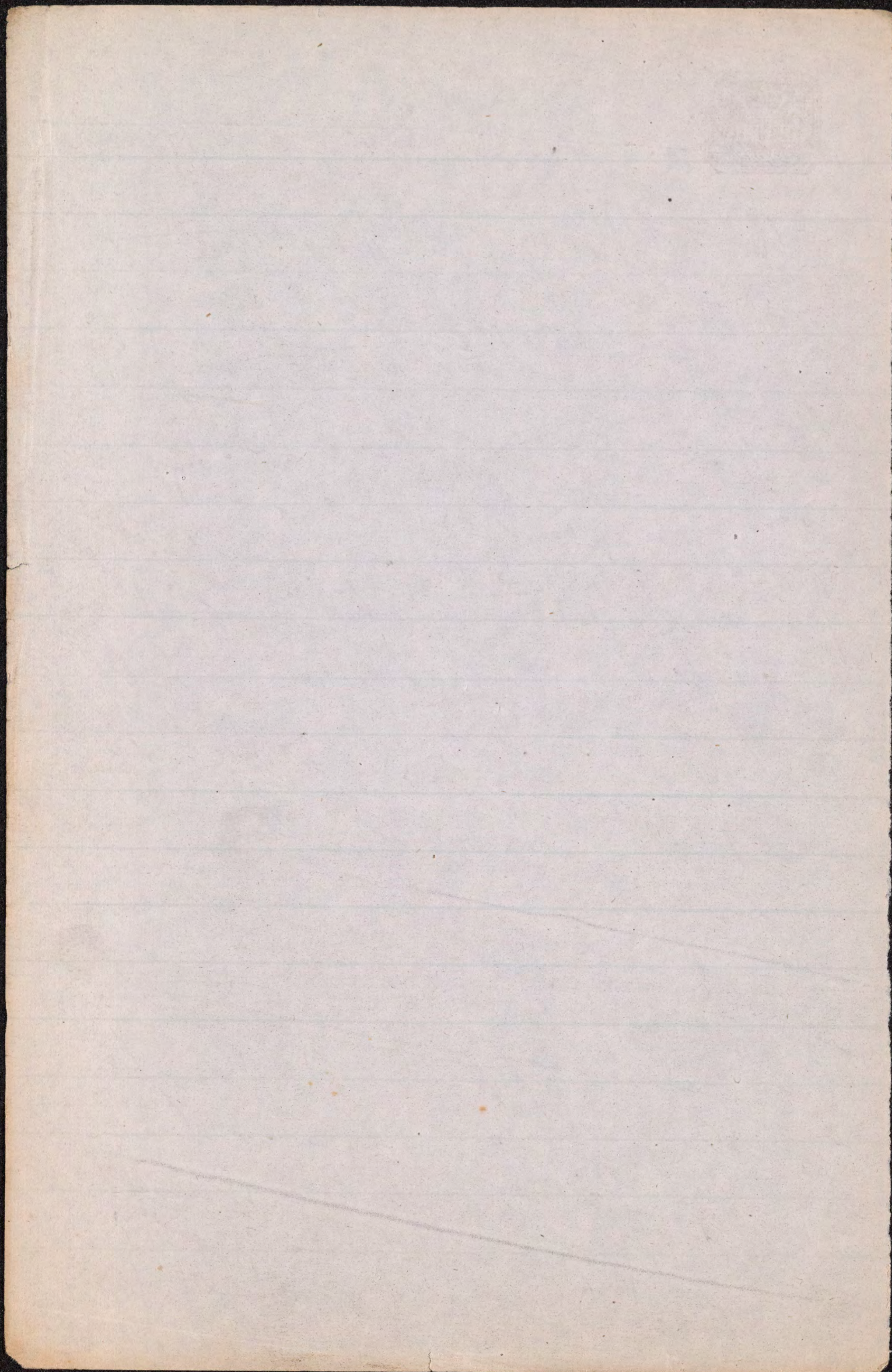
2 Highland companies in India
marched 195 m. in 9 days — or
21 m. per day. —



~~The word more about marches.~~

Robt Jackson, a high authority
limited an ordinary day's march
to 14 miles done in 4 hours
20 min, incl'g halts: or rate
of 3 or 4 miles an hour: — 1st hour
slow time, with 5 min. halt;
2nd hour quick time — then 15 min
halt; 3^d hour slow time; an
hour's halt after 2 or 3 hours.

Experienced officers however
^{Generally} do not approve of slow time
at all; preferring frequent halts.
My very moderate experience in walking
in the count gives me the idea that this is the
best plan. — Open order most healthy for air;
march ⁱⁿ should always be when practicable.



Long forced marches ~~for~~
~~and~~, sometimes injure troops
very much; most of all if they
have but little food & water.
In the Prussian army this has repeatedly occurred.
Even comparing that is
fairly may tell severely. Some

30 years ago a regiment of
Chasseurs marched 12 miles out
Paris on a hot July day.

They carried packs & wore thick
stiff stocks. — Half of them
reached Paris; the rest were
left with the villages or by the roadside.

Heat stroke is very common &
fatal under such circumstances.

⁰
P. W. H. C. Wood on "Thermic Fever" —

Heat action on muscle substance (& nerve substance?)

The destructive agency, But not alone? &c.

Blood also, I believe changed. The experiments show
that a little of such blood does not poison other
like animals even to our not conclusive. A small change
in the whole blood renders it incapable of sustaining life.

I may properly pause
or digress a moment to consider
this accident — Heat Stroke
more generally called Sunstroke or
Coup de Soleil. —

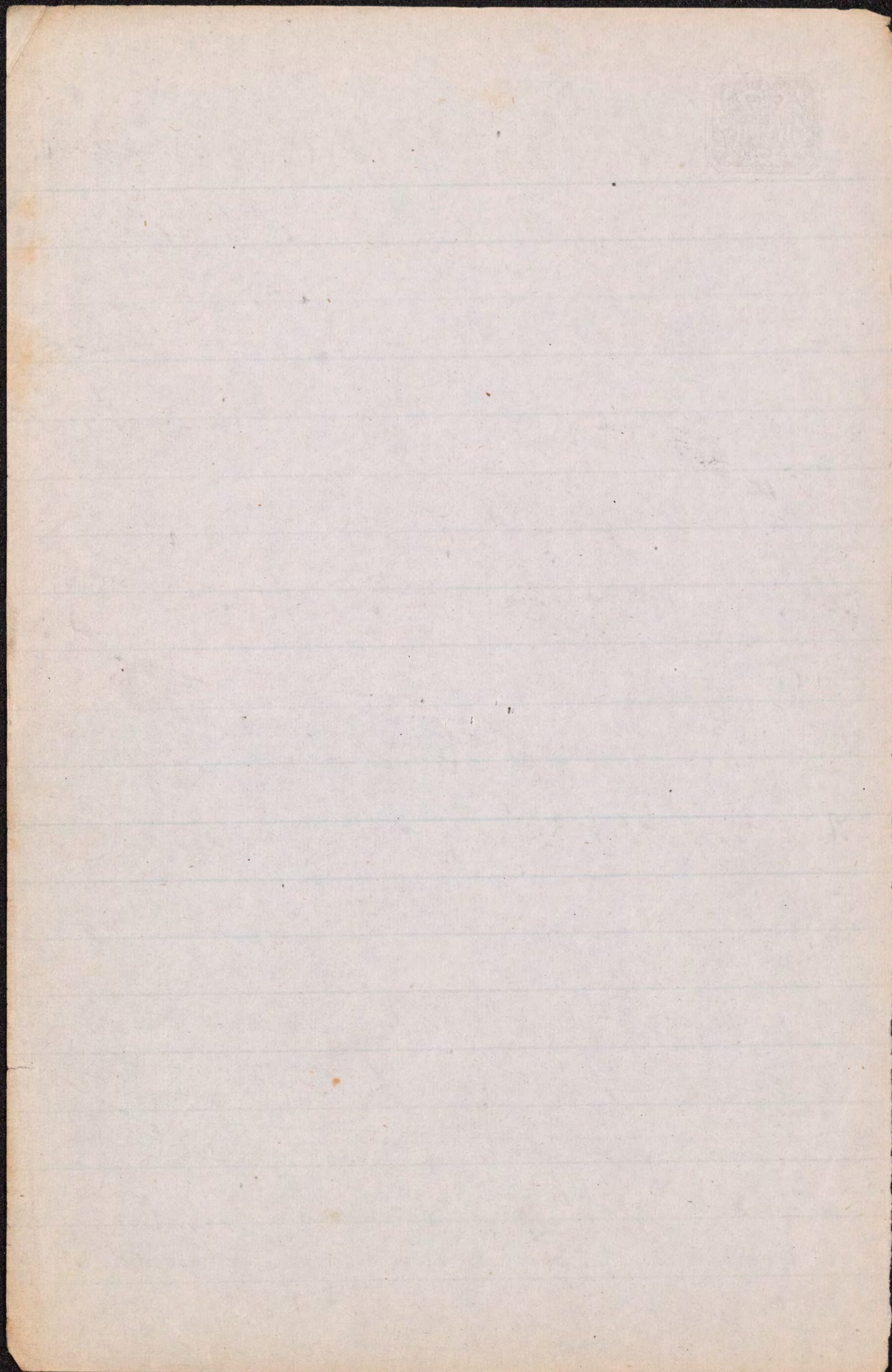
There are at least 2 forms
of it —
One, true Sun-stroke — cerebral congestion

the other, Heat-stroke — a general
systemic affection — the blood is
de vitalized by excessive heat
with exhausting fatigue.

Bernard says high heat kills by its action on muscle (of heart) nerve also.
In our climate, to protect the head

from the hottest sun is rational &
not effeminate. — Treatment of heat-stroke.
Cool!

Philadelphia — J. J. Daddo (Tokio)



In Carrying Weight, — there
(See Parker p. 373) is quite a difference in the
modes of disposing of it.

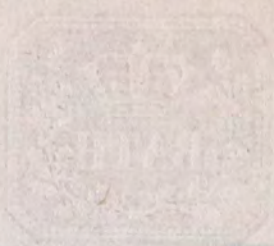
1. The lungs ought not to be
interfered with,

2. The weight should rest as
near as possible to the centre of
gravity.

3. It should be, if heavy,
distributed over considerable sur-
face.

4. No great blood vessel, nor
nerve, must be pressed upon.

The best places of pressure in
carrying are — The top of the head; the
shoulder; the sacrum; & the hip bones.



On the top of the head —
fish women — strawberry women — (with soft ring)
Arab & E-
gyptian women — tall & straight
as an arrow — from childhood carrying great
water pitchers on their heads.

On ^{the} shoulders Sacrum —
Porters — of Myrna Goos — sooth.
Sometimes with band around forehead too.

Balance important; as a
milkmaid with two equal pails.
& Parker gives preference (of several)
to Troubridge's plan for soldier's pack
— of making it a cylindrical valise
lying across the small of the back, —
held up by two curved rods under the arms
over the shoulders, — joined across the shoulders
by a yoke. — behind



[omit at Haverford]

Dr Parkes makes an ingenious
suggestion as to a soldier's ammu-
-nition — that it might be
carried in a hollow hip-belt,
holding ammunition in it all
round — so as to divide its
weight before & behind as
well as over the hips.

Bad style of chest dress
& weight. Messrs Dr Maclean
considers the main cause of a
very large proportion of heart
disease disorders among
young soldiers in British
Army. Dr Hammond, while Surgeon General
complained of some of the same errors of equipment in
the army of the United States.

*
^ Cole Torrey of Phila. Press, - gave his
testimony about 7 days' work (1871 or 2) after
an experience of some years in issuing his newspaper
every day including Sunday. It would not do.
Since that time his "Sunday Press" has
been resumed; no doubt with arrangements to
alternate the service with those engaged,
so that no one will really work 7 days
in the week. Torrey (1876) advocates opening Central Sunday
(Eladstone, 1875-6
a published declaration of the need.)

1875

A CONVENTION OF BAKERS was held in New York recently, at which resolutions were adopted protesting against the practice of baking on Sunday, because it keeps the journeyman baker employed continuously and leaves him no day or night of rest. The trade is represented in New York and Brooklyn by 8000 journeymen and apprentices. Of the 168 hours in a week, bakers are said to work from 108 to 130 hours, but their chief complaint is against the practice of keeping them employed during Sunday. The late Grand Master of the Order of Accepted Bakers said, at the meeting in New York, that the bakers of London did not work on Sunday, but went to work at three o'clock on Monday morning; that in Ireland the bakers only worked in the daytime, and that in Scotland they did not work on Sunday. A committee was appointed to confer with the employing bakers and make arrangements, if possible, for work to begin at ten o'clock on Sunday evenings.

A SCIENTIST in Missouri claims to have discovered a petrified sea lion while he was searching for geological specimens.

William Hooten had a hearing before Magistrate McClintock, charged with the theft of a watch belonging to Mary Freeman, and was held in \$800 to answer.

David Mundell was arrested at Fifteenth and South streets, on Wednesday night, charged with an assault and intent to kill. He is alleged to have had a knife flourishing in the street, and made an attack upon Policeman Kerns, who with Officer Addis made the arrest. In doing so the coat of the first named was cut. Magistrate Collins held Mundell in \$1000 bail to answer.

Magistrate Pole yesterday committed seven station house lodgers to the House of Correction for three months, on the ground of vagrancy.

Charles Steiner, a saloon keeper, was yesterday arrested on the charge of selling liquor on Sunday, and when taken to the Central Station for a hearing the prosecutor did not appear, and the case was continued for a hearing to-day.

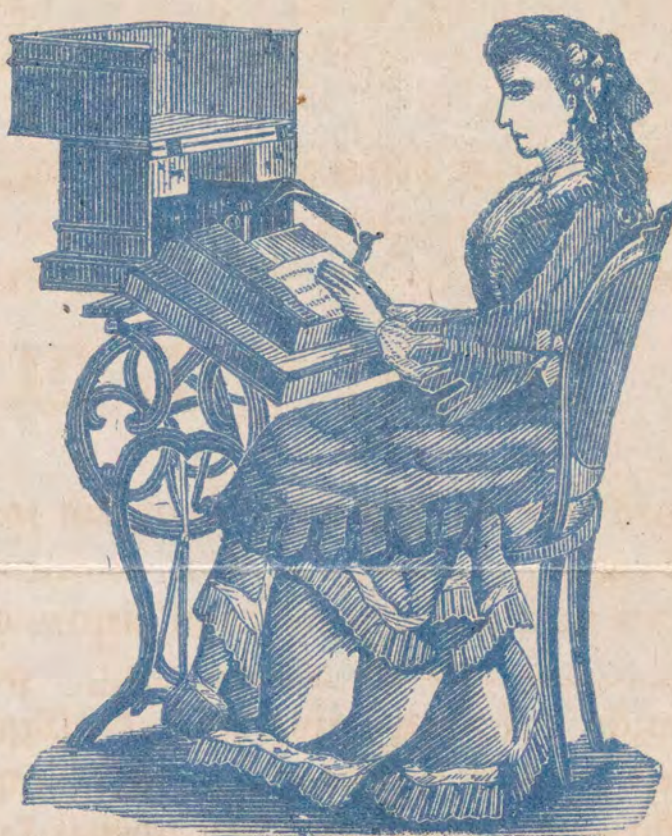
SAN FRANCISCO has a Chinese Horace Greeley. His sign, however, bears the words "Hop Yeast" instead of "Go West," the suggestive words of the Sage of Chappaqua.

THE SEWING MACHINE ADJUSTABLE TABLE

ADAPTED TO ALL THE VARIOUS
SEWING MACHINES
MANUFACTURED IN THE U. S.



UPRIGHT POSITION.



LEANING POSITION.

P A T E N T E D.

The Improvement of the Adjustable Table consists in so hingeing the frame that, by the simple turning of a thumb screw, the top of the table may be brought forward over the lap of the operator, thus permitting the

CHANGE OF POSITION

from the usual manner of leaning over the table, to one perfectly upright, or even leaning back against the chair. Any position, when retained for a length of time, becomes irksome and even painful, but by this invention changes of position may be made whenever desired.

Even while the Machine is in motion,

and without altering the belt or in any way affecting the working of the machine. The cost over the old style is trifling, while the frame is as solid and stiff as any other in use.

The *Sewing Machine Journal* of Chicago, No. 3, for August, 1873, in an article headed "Sewing Machines and their Effect upon Health," says: "It is the POSITION, not the mere LABOR of propelling the machine that fatigues the operator. We have never seen any satisfactory reason why the tables of Sewing Machines that are operated by foot-power should not be brought up over the lap, so that the operator might sit leaning slightly backward, with the spine thoroughly supported, and the limbs extended. THE VALUE OF AN IMPROVEMENT THAT WOULD ENABLE AN OPERATOR TO WORK EVEN ONE HOUR PER DAY LONGER THAN AT PRESENT, WITHOUT INJURIOUS FATIGUE, CAN SCARCELY BE OVERESTIMATED."

The queries of the *Sewing Machine Journal* are fully answered by the production of the

ADJUSTABLE TABLE

which supplies all the wants heretofore experienced by the upright fixed position in which operators were obliged to sit, while it scatters all the objections of medical men against the use of Sewing Machines by persons of delicate frame.

THE SEWING MACHINE ADJUSTABLE TABLE COMPANY

223 North Eighth St., Philadelphia,

Are prepared to

GRANT ROYALTIES

TO SEWING MACHINE COMPANIES OR TABLE MANUFACTURERS who may desire to manufacture them under the Company's Patent.

Agents should order samples of Adjustable Table from the American Button Hole Company of Philadelphia, or from the various Sewing Machine Companies that they represent, as the value will exhibit itself as soon properly tested.

Single Tables, can be had and machines placed on them at 223 North Eighth Street.

Printed at one Impression by J.L. RINGWALT, Seventh and Chestnut Sts., Philadelphia.

Patent of one invention by J. L. Ketchum, Sewing and Quilting Sewing Machine, Philadelphia, Pa.

Respectfully

Especially, Ladies can be had and machines placed on them at 233 North

properly tested.

and Ladies High Company, Philadelphia, Pa. or from the various Sewing Machine Companies that they represent as the value will exhibit itself from the results of the test.

See also the list of Sewing Machines and Quilting Sewing Machines in the

list of Sewing Machines and Quilting Sewing Machines in the

are prepared to

233 North Eighth St. Philadelphia, Pa.

THE SEWING MACHINE ADJUSTABLE TABLE COMPANY

by persons of delicate frame.

objections of mechanics and against the use of Sewing Machines in which the operator is obliged to sit, while the operator all the which supplies all the same benefits as the upright fixed

ADJUSTABLE TABLE

question of the

The question of the Sewing Machine Company is fully answered by the fact

that what would be a great advantage to most of the people who use the Sewing Machine Company is fully answered by the fact

that what would be a great advantage to most of the people who use the Sewing Machine Company is fully answered by the fact

Even while the Machine is in motion.

by the invention changes of position may be made whenever desired.

upright of even leaning back against the chair. Any position

from the same number of leaning over the table, to one perfectly

CHANGE OF POSITION

be brought forward over the top of the chair. Thus permitting the

frame that by the simple turning of a thumb screw, the top of the table may

the improvement of the Adjustable Table consists in so placing the

THE SEWING MACHINE ADJUSTABLE TABLE COMPANY

ADJUSTABLE TABLE

MANUFACTURED IN THE U. S.

SEWING MACHINE CO. HILLERS

ADAPTED TO ALL THE VARIETIES

ADJUSTABLE TABLE
THE SEWING MACHINE

Sewing-Machine question. ~~Mass. B. & Health~~ ^{the hygiene of}
A last consideration in reference to labor and
exercise is, that it is a
Hypnotical. Can

both muscle
for the human body & brain -
demand not only a night's sleep every 24 hours but
to ~~need~~ ^{also} one day of rest in 7 -

^{admitted} ^{authorised}
Ancient - Mosaic Law ^{in this is} may be held to be
rather than ^{our} precedent
~~if (not ordinance)~~ ^{for us} (as I believe)

but experience from its im-
portance & even necessity
S. Robert Pepl's testimony. ^{Glasgow} 1875. ^{the day of Robespierre}
French revolutionists tried to
^{or modify} abandon it — but soon found the
attempt ruinous. ^{1 in} 10 days will not do. ^{it}

Man & horse need it; as they
need sleep every night. It is a
final waste of power, not a gain,
to try to do without it.

Sabbatarians often take no rest on their Sabbath

Extremes: Puritan ultra-Judaism — &
European continental Sunday holiday:
both enormous and injurious.

Sunday Car Question.

Let the laboring class have their Sunday afternoon in the country.
Good health promotes good morals. "The groves were God's first temples."

Physician in practice
End of 15th Lecture, 1872.
29th Lecture, 1873
Hygiene of the Bony System.

Dependent on the Muscular, — as all hard
mechanically used parts are on the soft dactyl parts.

Bone-development in early life. —

Stationary Calisthenics.

Lateral deformity of spinal column.

Treatment by muscular culture, — unless
extreme & with great debility.

Hygiene of Bony System.

Connected closely with that of the muscular

Law — that the Soft,

active, vascular, high-functioned

organs & tissues govern & determine

the comparative development of the hard

passive & mechanically used parts.

So Brain, the skull; lungs, the

chest; Muscles, ^{in early life at least,} the bones generally.

This is important in physical culture.

Symmetry — especially of Spine

often deviates from — (girls, shoulders) —

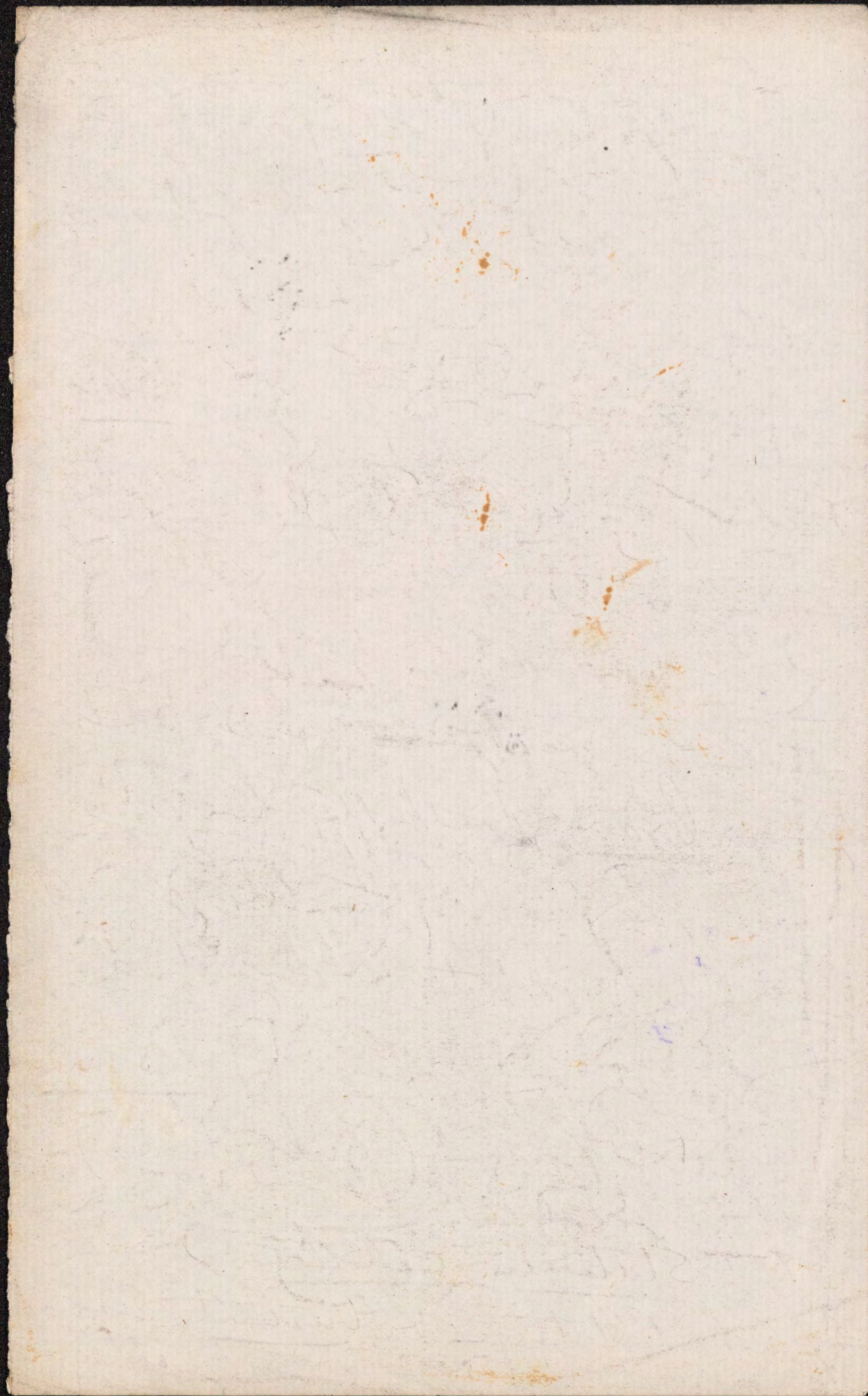
disproportioned school seats

Plute players.

Stationary calisthenics.

Spinal distortion — & treatment uses
apparatus rarely & secondarily only.

rickets — & infantile paralysis; general predisposition in cachectic parentage & unsanitary domestic circumstances.



[Dr Haverford]

Relation of Muscular

Exercise & development to

Mental Culture :: (Anticipating)

They are mutually helpful. Mens sana
in corpore sano.

Ancient Gymnasia -

Socrates - Pericles Alcibiades

(I presume) Plato - men athletes - superior in bodily as in intellectual development - were not the splendid achievements of the Greeks of Athens in part due to their harmonious culture of all their powers? - ~~The~~ If only their moral & spiritual capacities had been equally maintained & elevated, their glory would, I believe, have been perpetuated, instead of going out in darkness.

Over culture. right valuation of physical examples to us are then

2

Get, don't overdo
exercise. We don't want
a hypertrophy of muscle, at
expense of brain. Brains are worth
the most.

And, above all, don't
let any one exhaust his system
on a mistaken idea of training.
Excessive exercise enfeebles
always. In this, as in everything
else, health is promoted best
by moderation.